

THE Soybean Digest

REG. U. S. PAT. OFF.

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SOYBEAN PROCESSORS



MARCH, 1947

EDITOR'S DESK

Conference at Peoria Soybeaners of widely differing backgrounds and views—including men from the research arm of government, the colleges and industry—came together for a Soybean Conference at Peoria, February 27-28.

The meetings were called by the Northern Regional Research Laboratory, and were held at the Laboratory.

The plan was to discuss mutual problems and to map the road research should take in solving them. Producers of soybeans, consumers of soybean products and research men rubbed elbows and compared notes.

Of immediate significance, as brought out by the Conference, is the need for:

1—*A simple test for oil content in soybeans that can be used by the country elevator and allow the grower to be paid for the actual oil content of his beans.*

2—*Solution of the problem of flavor stability in soybean oil going into margarine and other foods.*

The need for more orderly marketing is not primarily a research problem, but it was also discussed. It is easy to see that dumping over half of the nation's soybean crop on the market at combining time inevitably results in overtaxed facilities and lower prices.

Many other questions came up. We are carrying a

report of the Conference in this issue. We hope to publish the papers given at the meetings in an early issue so that our readers may be fully informed on the work of the Conference.

Needless to say, results of the meetings will not all be felt at once. They may affect the industry for years to come.

We congratulate Dr. G. E. Hilbert, director of the Laboratory, and members of his staff for arranging the Conference and the efficient way in which it was conducted. We suggest that such meetings could profitably be made an annual affair.

Blue Book Is Coming The *Soybean Blue Book* is now on the press. Copies should reach our readers later this month.

This annual directory of the industry is published by the American Soybean Association. Included in it will be information on past production and prices of soybeans, soybean oil and oil meal; description of the various associations in the industry with lists of their officers; grading standards and a terminology of soybean terms.

We are also carrying directories of soybean processors and refiners, manufacturers of soybean products and of agencies conducting soybean research.

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Non-members may obtain copies for \$1 each.

We hope the little book will be of use to you.

Don't Be Stampeded

Some people have been afraid that there will not be enough soybean seed to plant the 1947 crop, due to the heavy sale of soybeans from the combine last fall.

In order to learn the facts, agronomists in several leading soybean states have been conducting extensive seedstock surveys in cooperation with a leading processor.

At the time we go to press these surveys are not entirely complete, but we have received reports from Ohio and Indiana. The report by J. W. Calland, director of agronomic research for Central Soya Co., Inc., for northwest Ohio, is published on pages 30 and 31, together with a short summary for Indiana.

Farmers in these sections at least apparently have enough seed to plant the desired acreage if it can be distributed properly. It is likely that similar situations exist in other states.

If this is the case, there is little need for alarm about the seed supply. We repeat our suggestion made last month: DO NOT PAY EXORBITANT PRICES for your soybean seed this spring. If you cannot find seed near home you doubtless will be able to locate it elsewhere at a fair price.

Consult the Seed Directory on page 42 for listings of seed for sale.

Goals May Not Be Met

As of today, it can be stated confidently that growers do not intend to meet the 1947 national soybean goal of 11.2 million acres.

"For the record," Assistant Secretary of Agriculture C. F. Brannan in announcing the 1947 support price at the Peoria Soybean Conference, forecast that producers would go all-out and plant the greatest acreage in history.

But representatives of growers from the heaviest soybean producing sections said they looked for a decrease rather than an increase in soybean acreage in their localities. Their reports check with results of a survey by Ward Calland of Central Soya Co., Inc. Replies from over 1,300 farmers indicate that northwest Ohio will plant 5 percent fewer acres to soybeans, instead of 38 percent more as called for by the 1947 goals.

Production officials themselves do not expect the 1946 acreage to be exceeded, our Washington correspondent reports.

In spite of present relatively high prices for soybeans, growers are in a mood to get back to a more normal farm crop pattern this year.

And the announced support of \$2.04 has done nothing to change their minds.

MARCH, 1947

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GROWERS

Diseases

Two diseases were given the ignominious leadership of some 30 diseases that at present cause most of the soybean losses in Illinois.

Brown stem rot and bud blight were the two diseases so recognized by William B. Allington, pathologist at the U. S. Regional Soybean Laboratory, in an address before a Farm and Home Week group on the University of Illinois campus.

The other 28 diseases known to attack soybeans do not generally cause heavy economic losses.

Of the two diseases listed, the brown stem rot is the more important. It was first observed early in the fall of 1944 in central Illinois. The unnamed fungus causing the disease can live in the soil when not attacking soybeans.

The federal pathologist pointed out that farm practices employed during the war years, such as too frequent growing of soybeans on the same soil, may have had a great bearing on the severity of the disease. Surveys show that continuous growing of soybeans or a corn-soybean rotation may favor the disease.

He reported that, when soybeans are grown on a piece of ground once in 3 years, the disease appears to be less active; and in rotations where soybeans are planted once in 4 years, the disease usually does not appear. "Our tentative recommendation for control is a 4-year rotation in which soybeans appear once," Allington declared.

Bud blight is a virus disease and, like brown stem rot, has not been found to be transmitted in the seed. Although something is known about it, pathologists are at a loss to offer recommendations for its control.

Mississippi Growers

To encourage Mississippi planters to grow soybeans this spring, Planters Oil Mill, Tunica, Miss., took about 100 planters to Osceola, Ark., for a 1-day meeting with the growers there to discuss the subject. Osceola is in Mississippi County, Ark., one of the nation's leaders in soybeans, with 1946 more than doubling previous acreages. Two large Greyhound

busses were chartered for the trip.

As a result of the trip, the planters were so enthusiastic that a large number have signed up to plant soybeans, and others are expected to follow before planting time, according to C. E. White, manager of the Tunica Mill. This mill plans to crush soybeans for the first time next season. Very few soybeans are grown in that section, known for the growing of long staple cotton.

"Soybean production will not replace cotton," Mr. White said. "But soybeans can be grown on land that is not suited to cotton. There is a great deal of land in the Delta where soybeans can be grown profitably."

Mr. White believes that soybeans will become more important in the South's agricultural economy. The cottonseed oil mills can crush them with very little change-over, thereby giving the mills a longer term of operation than is otherwise possible on cottonseed alone.

Buy Protein Now

Farmers who can anticipate their protein feed needs for the coming season may find it profitable to lay in a supply now, says Francis Kutish, Iowa State College farm economist.

Kutish points out that soybean oil meal looks like a good buy at present wholesale prices. Soybean oil meal is about the only "cost" item that has tumbled in price during the past few months—and the drop has been big.

Last November, soybean meal was selling wholesale at between \$95 and \$100 a ton. Now it can be bought some above \$60 a ton, which compares with old ceiling prices.

With buyers holding back, feed companies started to cut prices to avoid being stuck with a large supply of meal and the downward move was on its way.

PRICE MAY GO UP

Kutish says that the demand for protein feed may pick up with baby chicks and spring pigs arriving. The export demand for protein feeds also has strengthened. This may mean a strengthening of prices. Farmers who have their supply on hand will be protected against a possible price advance.

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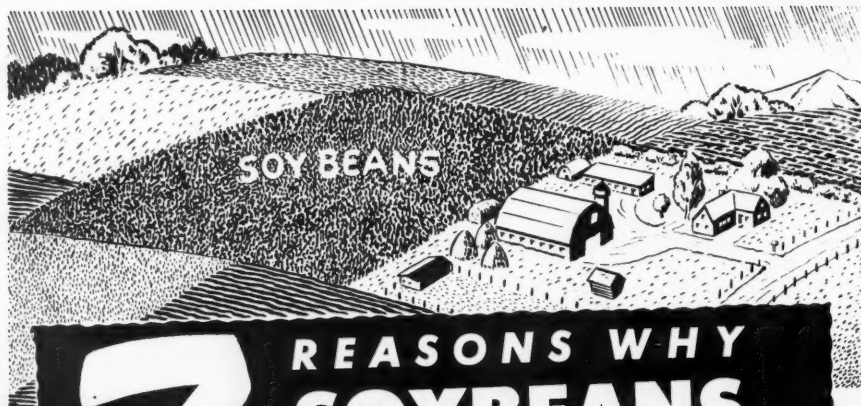
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7 REASONS WHY SOYBEANS OFFER BETTER PROFIT OPPORTUNITY IN 1947

MORE NET PROFIT per acre from soybeans in 1947 is a prospect you can't afford to overlook in your cropping program. Here are the "reasons why" for increasing your soybean acreage.

1. FAVORABLE PRICE RATIO. Soybeans, in relation to other cash crops, enjoy and will probably continue to enjoy a favorable price ratio throughout 1947. Other crops come nearer meeting demand.

2. WORLD SHORTAGE of fats and oils. Some European countries report 50% less oil consumption than before the war. The United States alone could consume a billion pounds more of fats and oils if available.

3. PENT-UP INDUSTRIAL DEMAND. Industrial demand for soybean oil exceeds supply. Almost 95% of domestic soybean oil went into food channels during the war. As soon as available, large quantities of soybean oil are expected to go into paints and linoleum.

4. LESS SOIL DEPLETION. Soybeans rob the soil of less fertility than some other crops. Nitrogen fixing quality of soybeans is not to be overlooked in your normal crop rotation programs.

5. DEMAND FOR HIGH PROTEIN FEED looks bright. If current use of high protein feeds continues, as recommended by leading animal nutritionists, needs for feed alone would require as much or more soybean meal than was produced during war years.

6. EXPANDING INDUSTRIAL USES. Leading research organizations are improving methods of separating oil from seed, improving color and flavor of both oil and meal and developing new industrial uses for soybeans.

7. NEW VARIETIES GIVE GREATER YIELDS. Breeders are constantly experimenting with a wide range of varieties of soybeans to develop greater yield and wider adaptability to a variety of soils.

Remember the prospect for more net profit from soybeans in 1947 when planning your cropping program. Plant more soybeans!

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CARGILL SOY BEAN PROCESSORS

Scrap Famine

The scrap iron harvest from farms during the past season was alarmingly short of need, reports Chas. N. Karr of the tractor division of Allis Chalmers Manufacturing Co.

The flow of old scrap from farms and other sources is down so low that steel production is seriously affected, according to Karr. Cutbacks in farm machinery production schedules have already resulted.

It is in the farmer's own interest to collect and market all the scrap possible immediately. Thereby he will not only speed up the day when he can buy new products of iron and steel but he also will get a high price for his scrap. Indirectly, he will also help conserve the nation's natural resources because every ton of scrap that is melted equals 1 ton of pig iron which requires between three and four tons of iron ore, coal and other minerals to produce.

The next 60 to 90 days are the critical ones. After that more scrap will flow from factories and other sources.

Fertilizers

W. W. McNair of the Palestine community in St. Francis County, Ark., demonstrated to his neighbors that it pays to fertilize soybeans, reports Assistant County Agent R. E. Hunter.

McNair marked off two separate areas on a 43-acre field. One contains 33 acres and the other 10 acres. On the 10-acre plot, he applied a half ton of 6-8-12 fertilizer on a well-prepared seedbed. He used no fertilizer on the other field.

McNair planted Ral soy soybeans in April. The rate was 4 pecks per acre. When he harvested the two fields, the 10 acres he fertilized averaged 27 bushels per acre. On the other plot he produced only about 20 bushels to the acre.

On Cotton Land

Soybeans made \$120 per acre for Henry Wells of Gregory, Ark., last year.

He planted cotton three times and failed to get a stand. Water seepage and unfavorable weather caused

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MARCH, 1947



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SPECIALTIES



the poor cotton stands, according to Woodruff County Agent W. B. Vinzant.

Wells then planted Ogden soybeans in late June when he abandoned further efforts to grow cotton. Harvested with a combine in November, the beans sold to a local elevator at \$3 a bushel.

Yield was as much as 40 bushels per acre on some of the land and averaged more than 33 bushels. Ogden variety proved to be his highest yielding soybean.

Plowing Still Best

Plowing, as a method of preparing soybean ground for planting, holds some edge over other tillage methods tested at Iowa State College.

That is pointed out by George Browning, soil conservationist at the

college, on the basis of 3-year experimental results just compiled.

Plowing resulted in 23.5 bushels per acre; hard ground listing, 23.3 bushels; subsurface tilling, 21.9 bushels; subsurface tilling and disking, 22.2 bushels; and disking, 21.9 bushels.

Seedbed for Wheat

Richland soybeans fit well into the management plan at the farm. Hugh Roebuck and Son operate in Logan county, Ohio reports *Capper's Farmer*. They put in 175 acres with a 7-inch drill. The crop is ready to combine before fall rains make the fields soft. The Roebucks go over part of the bean ground three times with a tandem disk, then drill winter wheat to give a cheap wheat seedbed. The beans are inoculated so they will produce nitrogen needed to make a heavy crop.

AS THE PRESS SEES IT

A Tariff View

The American Soybean Association knows the side on which its bread is spread—with margarine, of course. It knows that taxes and other forms of discriminatory legislation directed at margarine hurt soybean producers. So it has frequently advocated lifting restrictions on the sale of margarine.

In pushing for fewer restrictions on the sale of margarine, soybean producers are not only intelligently pursuing their own interest. They are also furthering the general interest of consumers. During the last year, however, the soybean association has shown signs of falling into the ancient trap of protectionism in foreign trade—the very thing it has been fighting on the domestic front.

Some leaders in the soybean association evidently have begun to worry about foreign competition from coconut oil, now that the war is over and we can again import oils from the southwest Pacific.

Any group which has argued so logically for removal of restrictions to domestic trade must find it difficult to be convincing on the other side.

The soybean industry in the United States is comparatively a youngster. Its growth has come largely in the past 20 years. The industry has been helped to some extent by protective legislation.

Coconut oil made up about two-thirds of the fats and oils used in margarine in the five-year period, 1931-35. But the federal excise tax on imported oils in 1934, plus

state taxes directed against imported oils, reduced this proportion to one-fourth in the five years, 1936-40. Both soybean and cottonseed oils gained accordingly.

Hardly any soybean oil was used in margarine before 1936. Cottonseed oil made up only 17 percent of the fats and oils used in margarine in 1931-35. By 1936-40, soybean oil made up 18 percent of the fats and oils in margarine, and cottonseed oil 44 percent.

Cottonseed and soybean oils also were helped by improved hydrogenation methods which gave them a lower melting point. This made the margarine melt quickly on the tongue, releasing the flavor of the cultured milk with which the oils had been churned.

During the war soybean oil made up 38 percent of the supply of fats and oils used in margarine, and cottonseed oil made up 48 percent. Soybean and cotton producers were not bothered by competition from the southwest Pacific, thanks to the Japs. Coconut oil made up only 2 percent of the supply between 1941 and 1944.

Now the coconut oil producing areas of the world are beginning to get back in production. We are importing large quantities of copra from the Philippines now, and more is to come. The temptation for the soybean association to push for more protection against this inflow will be strong. We hope the soybean people will resist it. Their case for lowered restrictions on margarine will be that much stronger.—*Des Moines (Iowa) Register*.

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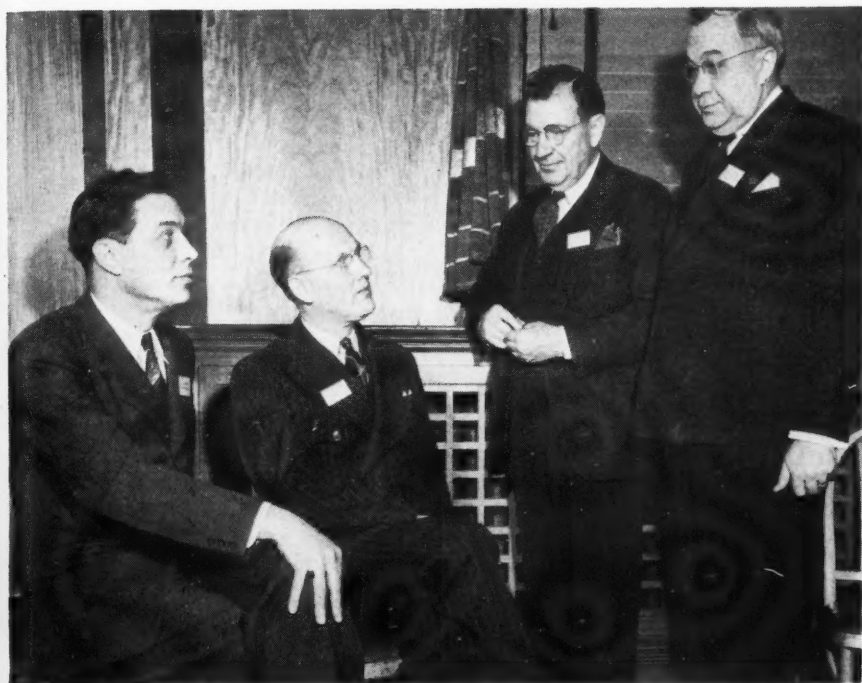
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AT PEORIA, TO DEVELOP A LONG-RANGE RESEARCH PROGRAM—

Soybean Conference



—Peoria Star Photo.

Leaders at the Peoria Soybean Conference: left to right, G. E. Hilbert, director of the Northern Regional Research Laboratory; Charles F. Brannan, assistant secretary of agriculture, Washington, D. C.; H. P. Rusk, dean of the college of agriculture, University of Illinois; and C. F. Speh, assistant chief, Bureau of Agricultural and Industrial Chemistry, Washington, D. C.

By KENT PELLETT

WHAT are the chief postwar problems that face the soybean industry?

How can research men best help to solve these problems?

These questions were placed before a 2-day Soybean Conference called by the Northern Regional Research Laboratory in Peoria February 27-28.

Attending the conference were representatives of the U. S. Department of Agriculture, state experiment stations, the American Soybean Association, the National Soybean Processors Association and various segments of the soybean industry. Speakers also were from these groups.

Said G. E. Hilbert, director of the Laboratory, in opening the meetings: "With almost explosive suddenness, soybeans have become the largest and most important domestic oilseed crop. Out of these discussions we hope to draw up a plan to deal with the problems caused by this growth of the industry. The plan may or may not be greatly different from the program now being followed."

Active in the sessions were W. H. Goss, assistant to the director, and Dr. R. T.

Milner, head of the analytical and physical chemical division of the Laboratory. C. F. Speh, assistant chief of the Bureau of Agricultural and Industrial Chemistry, was in attendance.

H. P. Rusk, dean of the college of agriculture of the University of Illinois and director of the Illinois agricultural experiment station, presided.

THE WORLD OUTLOOK

The present status of soybean production here and abroad and possible competition from other oilseeds was discussed by Robert M. Walsh, assistant to the chief of the Bureau of Agricultural Economics.

Walsh predicted the worldwide shortage of fats and oils will last another 4 or 5 years. The period of shortage may be followed by 4 or 5 years when there will be a better balance between demand and supply; and in perhaps 10 years, a serious surplus with a decline in prices, he said.

The question of what might happen to fats and oils markets if Congress allows the war powers act with its quotas on fats and oils to lapse this spring, was raised by E. K. Scheiter, director of the National Soybean Processors Association. Scheiter

predicted a probable chaotic market condition if the act should expire.

A support price of \$2.04 for 1947-crop soybeans was announced during the meetings by C. F. Brannan, assistant secretary of the Department of Agriculture. Brannan said USDA officials do not expect this relatively low price support to induce greater soybean acreage this year. They believe the present market price and strong demand for fats and oils will offer greater inducement for more soybean acres.

The assistant secretary pointed out that the announced support is almost 100 percent of the "comparable" price of soybeans, which exceeds the requirements of the Steagall act. He said it seems unlikely that farmers will have to resort to the USDA support program to obtain a good price for the 1947 crop. He forecast that 1947 soybean acreage goals will be met. With normal weather conditions, this would mean the greatest soybean production in history.

Brannan cited the need for a rapid and simple method of determining the oil content of soybeans, suitable for use by country elevators. He said expansion of soybean research hinges on the Hope-Flannagan research and marketing act passed by the last Congress, but for which money has not yet been appropriated.

GROWING PROBLEMS

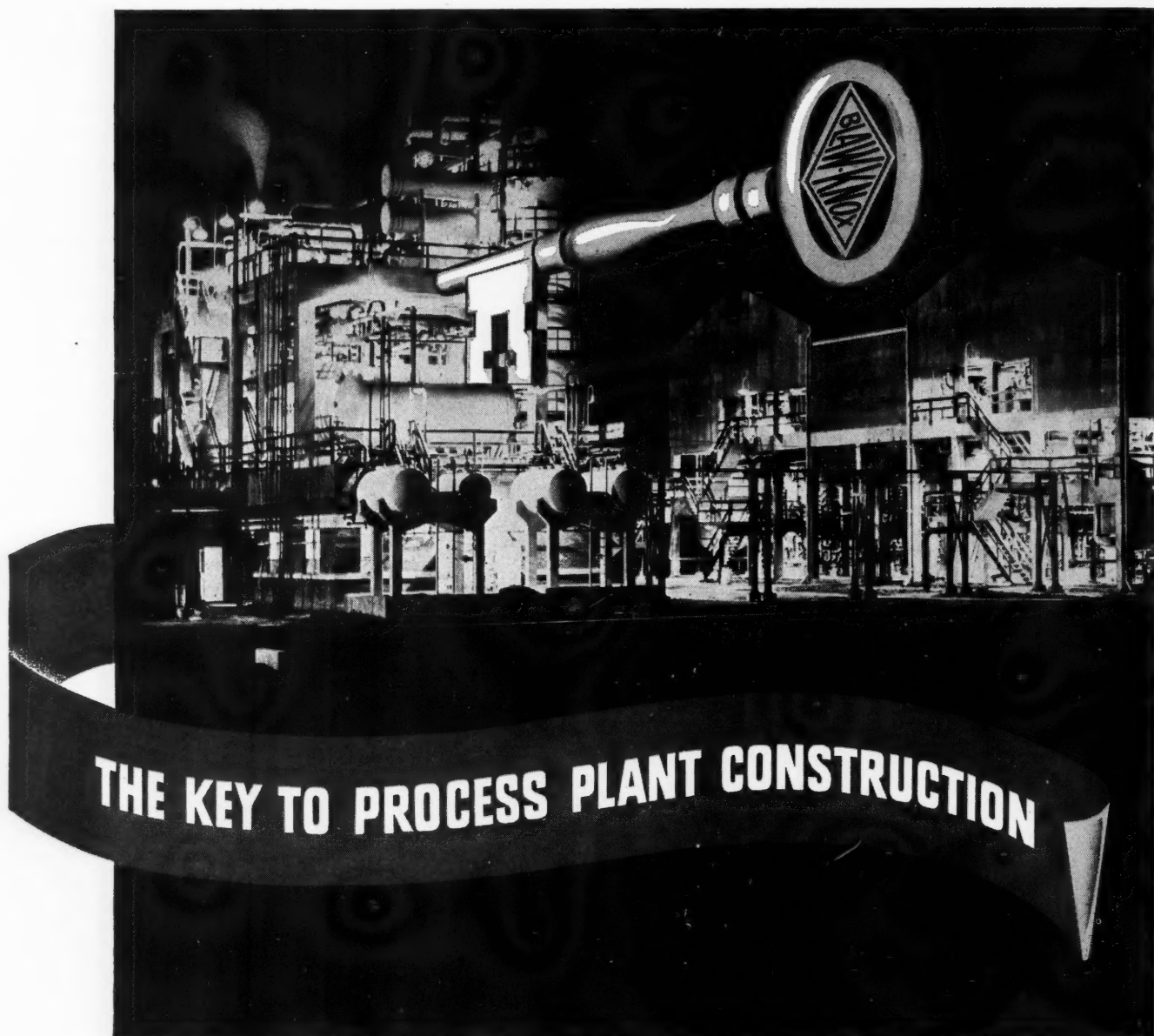
Hybrid corn and soybeans have introduced major changes in Cornbelt farming, said Walter W. McLaughlin, Decatur, Ill., president of the American Soybean Association.

McLaughlin said two factors had made soybeans a profitable crop:

1—Work of plant breeders which has doubled yields, and

2—Changes in growing and harvesting methods that have lowered production costs—10 minutes of man labor will now produce 1 bushel of soybeans.

The ASA president offered the following suggested fields for study and research: seedbed preparation; better inoculants; soybeans and crop rotations; problems arising out of soil types and topography; cultural practices such as time of planting and width of rows; soil conservation practices; use of fertilizers in soybean production; harvesting as affected by planting and cultivation methods; defoliation and hail damage; study of trace elements; stor-



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NEED BETTER MARKETING

The present practice of dumping 60 percent of the crop on the market within 6 to 8 weeks in the fall has a demoralizing effect on prices and causes great congestion in country and terminal elevators, said D. J. Bunnell, vice president of the National Soybean Processors Association.

Bunnell said 120 million bushels of soybeans left farmers' hands in a 6-to-8-week period last fall. He said the fall movement the past several years has been all out of proportion to the processors' ability to handle the rush. A larger percentage

of the crop should be held on the farm and marketed later in the year, in Bunnell's belief. "Best prices do not result from inefficient marketing."

He said a good futures market for soybeans would be of great benefit.

DROP IN PROTEIN

The NSPA official said a drop of 1 percent in the protein content of corn over the past 10 years is of great concern to farmers. For this reason, the proper use of protein concentrates in livestock feeding is more important than ever before.

He predicted that inefficient expeller processing plants will be compelled to sus-

pend operations in the competitive days ahead but added, "do not be too dogmatic about saying that extraction plants are going to entirely replace expeller plants. An extraction plant lends itself to a large scale, carefully supervised operation; the small, well managed expeller plant can trade direct with the country on both soybeans and soybean oil meal. Direct methods of trading will enable these plants to continue active in very competitive situations."

FLAVOR STABILITY

"Reversion" or flavor stability is the

(Continued on page 28)

At the Peoria Conference

Below are most of the men who attended the Peoria Soybean Conference February 27-28. Front row, left to right: A. H. C. Probst, assistant agronomy, Indiana Experiment Station; H. H. Kramer, Indiana Experiment Station; C. O. Claggett, agricultural chemist, North Dakota Experiment Station; J. H. Torrie, associate professor agronomy, Wisconsin Experiment Station; R. G. Houghlin, president National Soybean Processors Association; H. P. Rusk, director Illinois Experiment Station; C. F. Brannan, assistant secretary, U. S. Department of Agriculture; W. L. Burlison, head agronomy, Illinois Experiment Station; G. E. Hilbert, director Northern Regional Research Laboratory; R. H. Manley, chairman Soybean Research Council, National Soybean Processors Association.

Second row: C. T. Langford, head engineering and development division, Northern Regional Research Laboratory; P. R. Henson, agronomist, Delta Branch Experiment Station; Geo. M. Strayer, secretary, American Soybean Association; H. D. Hughes, professor agronomy, Iowa Agricultural Experiment Station; C. M. Woodworth, professor agronomy Illinois

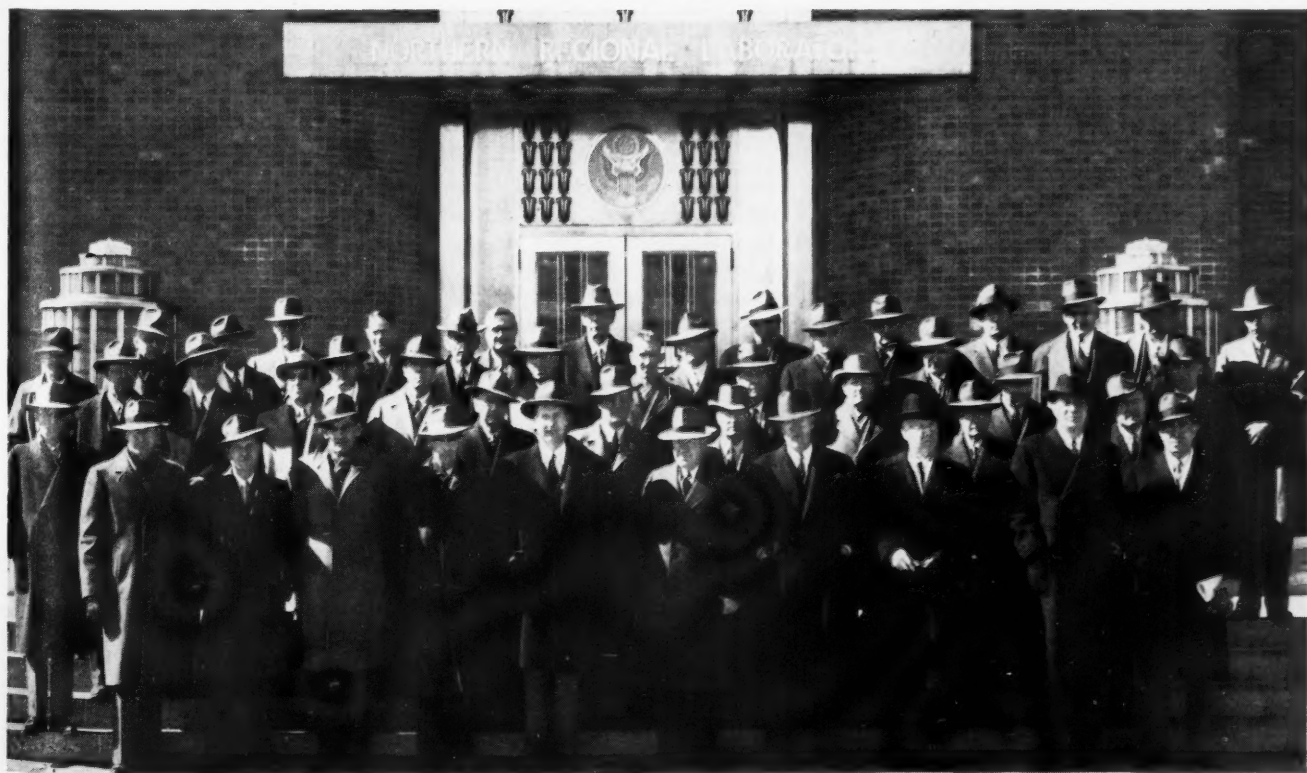
Agricultural Experiment Station; J. C. Cowan, head oil and protein division, Northern Regional Research Laboratory.

Back rows, left to right: R. T. M'Iner, head analytical and physical chemical division, Northern Regional Research Laboratory; K. E. Beeson, associate agronomy, Indiana Experiment Station; Kent Pellett, Soybean Digest; E. K. Scheiter, vice president A. E. Staley Mfg. Co.; C. F. Speh, assistant chief, Bureau of Agricultural and Industrial Chemistry, USDA; T. S. Hamilton, chief animal nutrition, Illinois Agricultural Experiment Station; D. J. Bunnell, vice president Central Soya Co., Inc.; C. K. Shuman, chairman crop improvement committee, National Soybean Processors Association; R. M. Walsh, assistant to chief, Bureau of Agricultural Economics.

J. L. Cartter, director U. S. Regional Soybean Laboratory; B. M. King, associate professor field crops, Missouri Agricultural Experiment Station; L. J. Norton, professor agricultural economics, Illinois Agricultural Experiment Station; W. E. Carroll, associate director Illinois Agricultural Experiment Station; W. J. Morse,

principal agronomist, Bureau of Plant Industry; O. H. Brownlee, assistant professor agricultural economics, Iowa Agricultural Experiment Station; W. W. McLaughlin, president American Soybean Association; R. M. Hixon, head chemistry, Iowa Agricultural Experiment Station; F. W. Quackenbush, head agricultural chemistry, Indiana Agricultural Experiment Station; H. R. Albrecht, assistant chief agronomy, Indiana Agricultural Experiment Station.

F. D. Keim, chairman agronomy, Nebraska Agricultural Experiment Station; G. A. Crapple, chairman research committee, National Association of Margarine Manufacturers; J. W. Hayward, chairman Soyfood Research Council; P. T. Truitt, president National Association of Margarine Manufacturers; W. H. Goss, assistant to director, Northern Regional Research Laboratory; Francis Scofield, National Paint, Varnish and Lacquer Association; Karl Nolin, chairman Cooperative Sales Co.; W. W. Farrow, associate chief cooperative research and service division, Farm Credit Administration; J. H. Shollenberger, head commodity development division, Northern Regional Research Laboratory.



SOYBEANS *in Southern Minnesota*



A soybean plot at the Southeast Experiment Station, Waseca, Minn.

By **R. E. HODGSON**

Superintendent Southeast Experiment Station, Waseca, Minn.

PERHAPS 28 successive years of experience with soybeans should qualify one as an authority, but while my enthusiasm is unabated it is my feeling that only the surface has been scratched in discovering the possible values in this versatile crop.

In other words, I don't feel that I know beans. I would like very much to find out more about them and be of any possible assistance in bringing this useful plant into its proper place in the economy of southern Minnesota agriculture. Perhaps a brief resume of our trials and errors might help someone else.

Back in 1920 there was a burst of publicity advocating that soybeans planted with corn would enhance the protein content of silage. Like many others, we tried it, but I have seen only a few fields (not ours) where it seemed reasonably successful. Usually where there was a good stand of tall corn, the beans gave up the ghost. If the beans got a head start, the corn suffered. Further, a pencil and paper proved that the actual pounds of protein added to a cow's daily ration by a few beans in 12 to 15 tons of silage per acre was more fancy than fact.

Like so many other plans for getting something for nothing, that scheme blew up and there followed a period when soybeans around here were about as common as banana trees. Then we had a few

dry years along about 1934 to 1936 and farmers began to appreciate the fact that soys would grow where corn wilted. That gave them another start. When the wet years came in turn, it was discovered that soys would make a crop when corn couldn't take it. Of course they won't grow under water like seaweed, but we've planted when the horses went hock deep in mud and the tractor stood in the shed. The 25 bushels per acre we harvested seemed more than we deserved. Some people have had good success growing them on peat.

PLANTING RATE

For 2 years we counted beans and plants to get accurate results on the yield as affected by rate of planting. We had several steps between the extremes of 3 foot rows with beans 3 inches apart in the row and 6 inch rows with beans $\frac{1}{2}$ inch apart. Harvest indicated a steady increase in yield associated with the increase in seed per acre. We have seeded 450 pounds per acre with a grain drill and threshed 45 bushels per acre, our record yield. This might not be repeated in a very dry year but it worked when we tried it. Our present practice in seeding is 24 inch rows with beans an inch apart. The weight will vary with the variety but with us it runs around 120 pounds per acre.

We think seeding solid or in 6 inch rows with a grain drill is the ideal way to grow beans if, and it's a most important if, weeds can be controlled. We had to drop

• *Something about varieties, cultural practices and other aspects of soybean growing, by the superintendent of the Southeast Minnesota Experiment Station.*

back to rows to permit better cultivation, because every weed cuts the yield of soybeans. Those who do not have sugar beet cultivators usually plant in 30 or 36 inch rows but we observe that narrower rows cover the ground more quickly and so take less cultivation. It seems to be entirely a matter of weed control and getting as many plants per acre as possible.

If the weather would always cooperate, we could do all necessary cultivation with rotary hoe or harrow. We like to work the ground just before planting and sometimes if there is no other pressing business we harrow again a day or two later, just before the sprouts emerge. Rolling after planting starts the beans more uniformly and more quickly but it also starts the weeds. One grower told me he rolled the ground a few days before planting. The weeds thought the crop was in and came up with a jump. Then he played a dirty trick on them. We expect to try that.

During the time from sprouting until the first true leaves are well out, soybean plants are so brittle and tender that we have been timid about harrowing. After they get 4 inches high and leaves are well formed, they become limp on a hot afternoon and if the soil is dry a harrow does little damage to the beans. It may look bad, and several times we have been chased out of the field by the apprehension that the harrow was ruining our precious beans. Then a few days later we have been sorry that we quit. When beans are a little older, they will stand lots of dragging. I have hitched a rotary hoe behind the tractor and a 2 section harrow behind the hoe and gone at high speed all afternoon with no appreciable damage to the beans. Of course if the weeds are large and well rooted, the harrow will not hurt them either. We like an old fashioned boss harrow with wooden bars better than a steel drag.

ROTARY HOE

The rotary hoe is a wonderful machine for cultivating soybeans if the weather and weeds are right. The ground must be dry and the weeds small. Then the hoe will do an excellent job and the faster it goes (up to 15 miles per hour at least) the

better. We have used it behind a truck or tractor, but too often when the weeds are ready, the ground is wet. By the time it is dry, the weeds are well rooted. That is why we generally grow the beans in rows. A cultivator can hurt at least some of the larger weeds.

We have harvested beans in every way we could think of. For hay we prefer to cut with a mower, windrow when well wilted and leave in the windrow until they are dry. They take longer to cure than does alfalfa and sometimes it is necessary to turn the windrows over, but this crumbles a lot of leaves if they are dry on top. Cutting with a binder, the bundles can be set up in A shaped shocks of 4 bundles each, but in wet weather they often mould at the bands. Of course they are easier to handle this way. We haven't tried chopping from the windrow, but that should be satisfactory if the beans can be dried sufficiently in the field or by an air blast after they are in the barn.

The combine is handiest for harvesting seed and will do a good job if the cylinder is slowed down to prevent cracking. We have used a binder and threshing machine and they work as well as the combine if the cylinder is slowed to around 450 rpm but it requires much more labor. It is also hard on the binder and canvasses.

The ideal soybean variety would stand up perfectly in all seasons and soils. It would mature early enough to escape



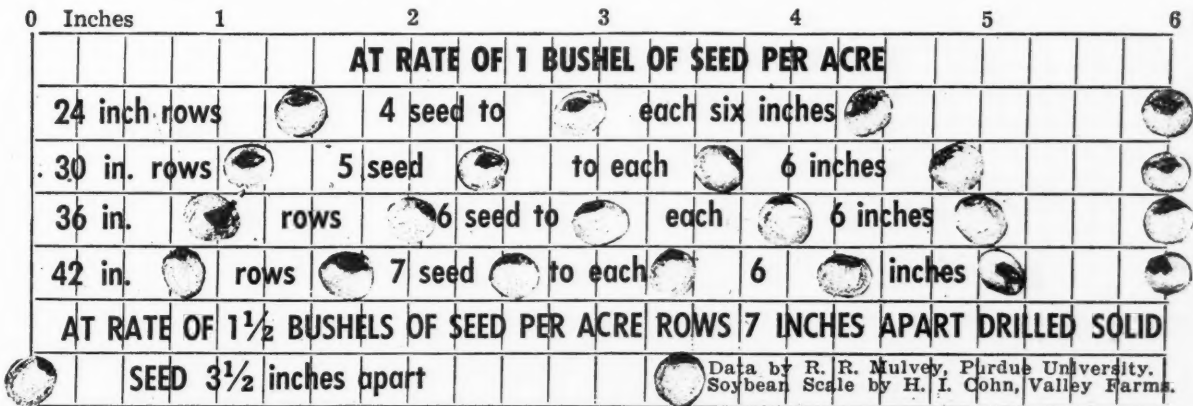
How much damage will a harrow do on 18-inch-high soybeans? That is what this man at the Southeast Experiment Station, Waseca, Minn., was trying to find out. The soybeans had been harrowed regularly every 10 days. The field looked tough after this last cultivation but recovered in a few days.

freezing in those years when it didn't pay to take a chance on a nice fall. All the pods would be borne at least 6 inches above the ground level. The plants would be fairly tall, disease resistant, cover the ground quickly to compete with weeds and the seed would be high in oil and oil quality. So far we haven't found the perfect bean, but a fine breeding program on a broad basis is now under way and progress is promising. We are testing the early varieties developed by the U. S. D. A. Regional Soybean Laboratory at Urbana, Illinois.

At present, our favorite variety here is Habaro. It has never failed to make a crop in 28 successive years. So far, no variety has out yielded it over a period of several years. It is sufficiently early, stands up well and has a large yellow seed but it is not perfect. For one thing, the oil content runs about 1½ percent lower than Manchua, some pods grow too close to the ground and the plants could be taller. It has yielded between 25 and 30 bushels per acre as a long time aver-

Try This Aid for Spacing Seed

A handy guide for proper spacing of seed in the row, whether drill or corn planter be used. Scale shows correct spacing for rows of four different widths at the rate of 1 bushel per acre; and for drilled solid at the rate of 1½ bushels. The scale was drawn up by H. I. Cohn, Valley Farms Co., Carrollton, Ill., from data prepared by R. R. Mulvey of the agronomy department at Purdue University.



SOYBEAN SEEDING SCALE

TO REGULATE DRILLS OR CORN PLANTERS FOR SOYBEANS USE FOLLOWING METHOD:

IF BEANS ARE PLANTED IN ROWS AT RATE OF ONE BUSHEL PER ACRE AND IF DISTANCE BETWEEN ROWS IS 24 inches 30 inches 36 inches 42 inches THEN SEED DROPPED PER YARD 24 seed 30 seed 36 seed 42 seed OR FOR EVERY 6 INCHES THERE WILL BE 4 seed 5 seed 6 seed 7 seed If drilled solid (rows 7-in. apart) at rate of 1½ bu. drills should drop seed 3½ inches apart or 10 to 11. per yard. Regulate drill or planter by running in gear on hard ground before going to field.

age. We like Habaro but are looking for something better.

Ottawa Mandarin is a newer variety of considerable promise. Unlike the old Mandarin, it equals Manchu in oil yield and it is earlier than Habaro by a week or 10 days. It is also shorter and the beans hug the ground too closely. So far it has yielded about the same as Habaro. Richland we liked in every way except that some years it did not mature for us. On our heavy clay soil, Earlyana has not impressed us favorably, but neighbors on earlier or sandier soil report good success with it. We'll ask them again after a few years. Manchu lodges badly. Otherwise we like it as well as Habaro. Flambeau, Kabott and Minsoy are earlier than we need, but we won't object to that if they yield as well as Habaro. Undoubtedly with all the new material coming on, the old varieties will soon be crowded out of the picture.

FUTURE IN MINNESOTA

The extent to which soybeans will occupy southern Minnesota acres will of course depend on relative prices. Farmers have to make their living and need to figure closely what combination of crops will make the best net return. With the present shortage of oils, soybeans look good, especially in southeastern Minnesota. West of Mankato, flax is more of a competitor. When prices drop, no one can tell where they will land or predict their relative positions.

As a crop, soybeans meet with much favor, especially on heavy clay soils which tend to pack and bake. Farmers have learned something about bean culture and if the new day of weedless farming via chemical sprays materializes, soybean yields may be substantially advanced. New varieties with special adaptations and desirable qualities are a factor favoring maintenance of present high acreages. Disease may enter into the picture, but at present in this locality the worst disease common to soybeans is jack rabbits and the neighbors cattle. Economical harvesting at a convenient time appeals to farm managers trying to spread the labor load. Generally, present growers on level land like beans as a crop and will continue with them as long as they can make net returns comparable with other enterprises.

My own enthusiasm for soybeans is still strong and the prospects for new material coming on are most encouraging. There was one new number in the plots last year that just struck my fancy. Soon it may be out with a name and we'll be increasing it to see whether it does as well in a 20 acre field as it did in the row. I hope also that as we learn more of the know how of growing beans and new knowledge slowly seeps into our farm practices, we may be able better to appreciate and use the soybean hen that lays golden eggs.



Trial plots of soybeans on dry sandy soil at Fiskeby, Sweden.

SWEDEN HUNTS FOR VARIETIES

The first problem of soybean production in Sweden is finding varieties that will mature in that northern latitude.

Breeding work at Fiskeby in Sweden is covered in the preliminary report of Sven A. Holmberg of Norrköping in the *Journal of the Royal Swedish Academy of Agriculture*. Middle Sweden is in the same latitude as northern Canada and southern Alaska. Successful soybean growing requires varieties that can be harvested in early September.

"Varieties which in America and elsewhere are described as extra early do not behave as such when grown in the cool, long-day climate of Sweden," states Mr. Holmberg. "The Canadian variety, Manitoba Brown, which ripens in 100 days at Ottawa, Ontario on the 45th latitude requires 143 days on the 58th latitude at Fiskeby, Sweden. The Sioux variety ripens in 85 days in Virginia, in 114-121 days on southern Sachalin and in 136 days at Fiskeby. The Giant Green, said to ripen in 109 days in Illinois, is unable to produce fully developed seeds in the climate of Fiskeby.

"Even the earliest among the soybean varieties obtainable abroad can produce a satisfactory crop in Sweden only in particularly favorable localities.

"Attempts to raise such a variety after selection from samples chosen from the most northerly soybean cultivations, met with but little success. Out of 6,426 attempted hybridizations, only 872 gave progeny. By crossing the short, extra-early varieties found on the islands of Hokkaido

and Sachalin with the taller, medium-early varieties from Manchuria and Germany, new hybrids were raised. Some of these were decidedly earlier in maturity than either of their parents and are also medium in height.

"Many of these new hybrids ripen on our latitudes the first days of September showing an advance in earliness of 2 to 3 weeks as compared with the extra early varieties cultivated before."

Mr. Holmberg will be glad to send a copy of his report on the work at Fiskeby, which contains an English summary, to interested readers. Address Sven A. Holmberg, Norrköping, Sweden.

Hybrid No. 291-1-2 harvested at Fiskeby on the 9th of September, 1946. The plant is 28 inches tall.



SOYBEAN DIGEST



Dr. C. N. Hoffer, center, explains his device for studying soil aeration at the Van Wert, Ohio, soybean show. Other men on the program, from left to right: Ward Calland, Lester Mayer, F. A. Frank and Lewis Saboe.

EIGHTH ROUNDUP AT VAN WERT

February 5 marked the 8th consecutive year that the soybean producers of northwestern Ohio and eastern Indiana have met at Van Wert, Ohio, to discuss the latest developments in the production and marketing of this important crop.

The "Soybean Roundup" is a unique meeting. It was organized by a local committee in the early years of the introduction of the "Wonder Bean" in America. Its primary purpose is to bring soybean-minded men together to exchange ideas and talk over the future of the crop—at the producer's level and in farmer's terms. The main benefits to the industry are derived from the open forum of discussion which has always followed talks by leading experts on production, marketing and utilization of the soybean crop.

The farmers of this section are growing soybeans on land that is commonly classified as "heavy soils". Dr. George N. Hoffer, research agronomist for the American Potash Institute, discussed the subject, "What Plants and Soils Tell Us". Dr. Hoffer demonstrated his method of studying soils below plow depth and explained the importance of soil ventilation. The soybean is a shallow rooted crop and depends on either mechanical means of breaking up the hardpan furrow sole, or other crops that will penetrate this sole and release the fertility and water needed by the soybean plant. Being a rapidly growing plant that deposits extra large amounts of those complex chemical compounds—oil and protein—in a small space, and in a short period of time, the soybean needs soil, air and water conditions that are ideal to get maximum production.

Dr. Hoffer emphasized the need of soil aeration to assist the bacteria, fungi and other soil organisms in the release of the carbon dioxide which the soybean plant requires to manufacture the oil and protein.

Lester Mayer, of the Walley Agricultural Service, Fort Wayne, Ind., brought a summary of "What the Farm Manager thinks of Soybeans". Mr. Mayer stated that he thought the soybean would continue to be a major crop in the Cornbelt or soybean belt which are practically synonymous areas. Soybeans do compete with corn for labor but, with improved machinery and power farming in handling both crops, this competition is not a serious handicap to either crop. This problem could easily be worked out on the individual farm.

Mr. Mayer thinks that soybeans will eventually all be grown in rows like corn, probably of about 24-28 inches. Why not? Rowed beans is the answer to the high seed cost and weed problem and also results in higher yields.

Mr. Mayer also called attention to the fact that soybean oil is now established on the American market; that it is indispensable in food for the American table as well as in a vast number of industrial products. Also, that soybean protein will always be in demand for livestock and poultry feeds. And, that the trend toward large herds and flocks will emphasize the use of balanced rations; hence, the continued demand for more soybean protein.

In the "Roundup" discussion which followed the main talks, Dr. Hoffer and Mr. Mayer were assisted by Dr. F. A. Frank from Purdue University and Dr. Lewis

Saboe from Ohio State University. These men are both experts on soybean varieties, diseases, and cultural and fertility requirements as related to other crops in the rotation.

Ward Calland, agronomic research director, Central Soya Co., Decatur, Ind., was also present to answer questions from the processor's point of view. Mr. Calland has been in regular attendance at the Soybean Roundup for several years and has recently been accumulating data on cultural and harvesting questions uppermost in the farmer's mind. He has recently published a paper entitled "Soybeans, Today and Tomorrow" which is a very complete summary of the status of the soybean crop in American agriculture.

The Eighth Annual "Soybean Roundup" was a decided success and proved to be a very informative and educational meeting for all who attended.

Members of the Van Wert Soybean Committee, which sponsors the annual show, include John Leonard, chairman; L. C. Holtkamp, secretary and treasurer; W. G. Weigle, Rei Duprey, Gus Holland, Dale Wortman, L. A. Gilliland, Ray High, Meredith Springer, R. S. Oetzel and Arthur Brooks.

The show is part of the annual Van Wert County Farm Week.

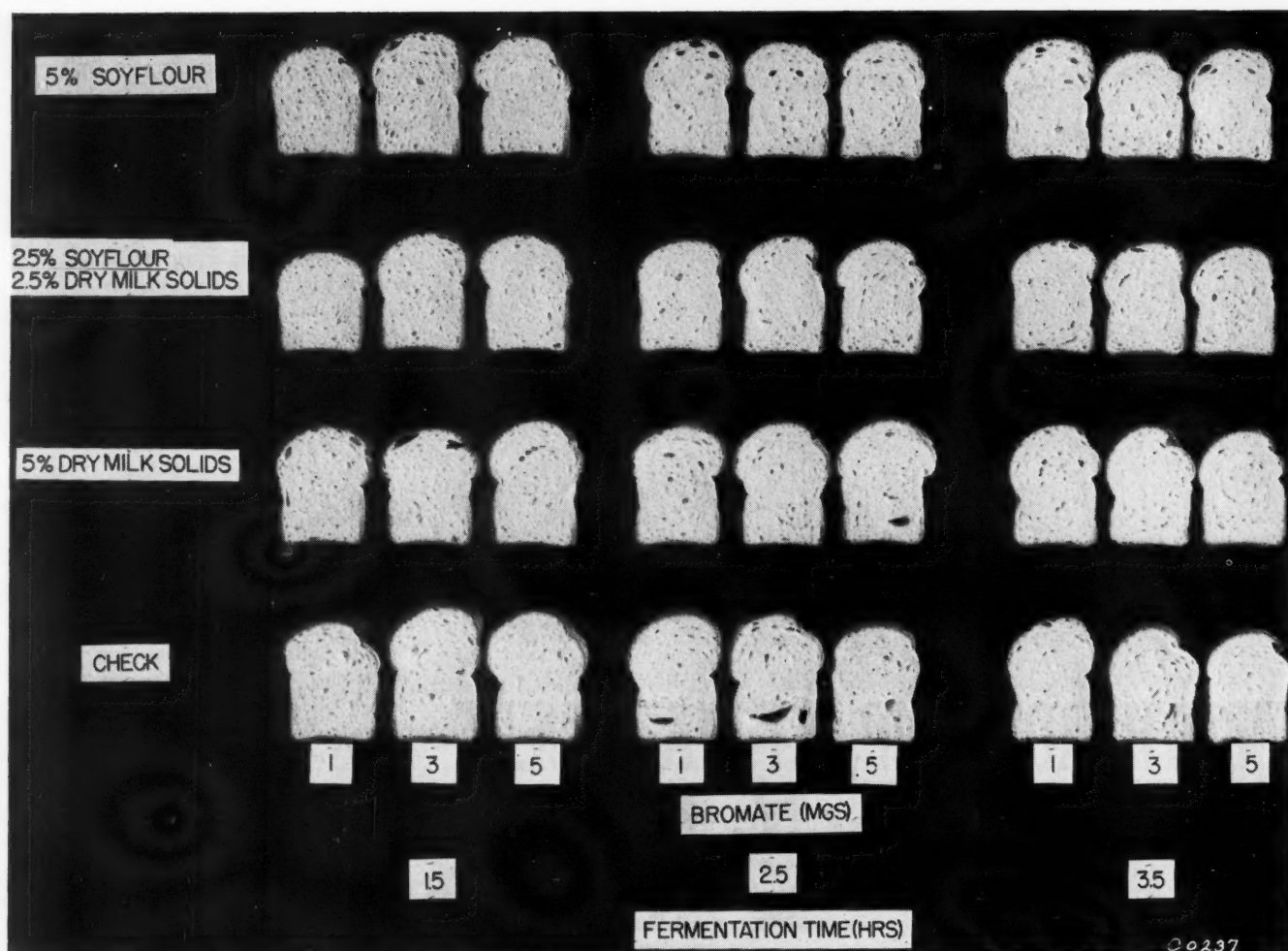
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FRENCH OILSEED CROP SHARPLY ABOVE AVERAGE

Reflecting the sharp expansion in rapeseed output, French oilseed production for 1946 showed an increase of 58 percent over the 1945 crop and more than 800 percent over the 10-year (1930-39) average. The 1946 total of 160,000 short tons from 438,000 acres, compared with 100,000 tons from 551,000 acres in 1945. The rapeseed crop of 127,000 tons showed an increase of 140 and 650 percent, respectively, over last year's and the 1930-39 output. Sharp declines occurred in all other oilseed crops, particularly poppy seed, which is down 52 percent from last year's output, and sunflower seed, down 28 percent.

Of minor importance prior to 1940, vegetable-oil crops were greatly increased during the war years in an effort to offset in part the serious deficits in fats and oils resulting from the elimination of the usual imports. Rapeseed, however, seems to be the only oilseed crop with yields sufficiently high and stable to permit economical production. The crop has gained importance in some of the best wheat areas of northern France, and its production is likely to be continued, particularly as mechanical harvesting becomes more widespread.

Despite an over-all reduction in the area planted to vegetable-oil crops last year, yields generally have been satisfactory, and the oilseed harvest will furnish an important contribution to the short supplies of fats in France.



A study of selected loaves employing soy flour and dry milk solids.

SOY FLOUR IN BREAD

By **EMERY C. SWANSON***

Kansas State College, Manhattan Kans.

THE ACCELERATED development of the soybean into a commodity popularly acceptable as a human food has been in progress for several years. However, the use of soy flour in bread is a recent development. There is not the same background of experience for its use as there is for the use of dry milk solids. It would be wishful thinking to declare the development a completed project.

Soy flour has much to offer as a human food as it is highly nutritious and relatively cheap. The nutritional benefits have been enhanced by improved methods of

manufacture. Aside from its nutritive and economic advantages, which appeal to the individual consumer, soy flour may have several characteristics which appeal to the food industries. Whether or not it has these characteristics seems to depend largely on the selection of raw material (soybeans) and method of manufacture.

The discussion of soy flour in this article has been limited to the effect of its

• *The author, now research chemist for the International Milling Co., reports on a 2-year study carried on by him while he was instructor in milling industry at Kansas State College. The study was sponsored by the Soy Flour Association.*

use in the baking industry, specifically in bread. The data on which the discussion has been based were obtained during a 2-year study by the Department of Milling Industry, Kansas State College, Manhattan, Kans. The study was sponsored by the Soy Flour Association.

The initial phase of the project was devoted to determining the effect of using soy flour on dough and bread characteristics. Its effect on water absorption, mixing time, mixing tolerance, and gluten characteristics were noted when used in bread dough prepared, handled, and baked by the usual laboratory methods. Following these detailed studies which characterized the effect of soy flour in bread, formulas and procedures for using it were devised which overcame some of the difficulties encountered.

A third phase included a comparison

Contribution No. 136 Department of Milling Industry.

*Present address: International Milling Company, Minneapolis 1, Minn.

of soy flour with dry milk solids as a constituent of bread.

Other points included were:

Methods of incorporating soy flour into bread dough.

The effect on baking quality of several varieties of soybeans.

The uniformity of commercially manufactured soy flours with respect to their influence on baking quality.

The shortening value of soybean oil.

WATER ABSORPTION

The majority of 43 soy flour samples tested had greater water absorbing capacities than wheat flour. This was due, in part, to the lower moisture content of the

soy flours. However, several of the soy flours possessed better absorption ability than wheat flour, regardless of the moisture factor.

Proper selection and processing of soybeans would probably enhance this characteristic. Those samples possessing the larger absorption capacity were predominantly of the low-fat types produced by the expeller and extraction processes.

MIXING TIME

About half of the soy flour samples tested were found to shorten the time required to mix bread dough to its best condition. A few samples lengthened the mixing time. The reduction in mixing

time caused by soy flour was due primarily to a dilution of the wheat gluten, but the inherent characteristics of soy flour also had an effect.

The reduction in mixing time would be desirable to a commercial baker if the bread produced is not lowered in quality. The decrease in gluten concentration in the dough, unless otherwise compensated for, would be harmful (explained later). A decrease in mixing time due to the properties of soy flour might not be harmful.

It is possible that further research would develop soy flours which would give greatest reduction in mixing requirements with less harmful effects. However, it would not generally be correct at this time to include the mixing time factor as a desirable feature of using soy flour in bread.

MIXING TOLERANCE

Mixing tolerance is a characteristic of bread dough sought for by the baker. The greater the tolerance, the less the chances of damaging the resulting bread because of mixing errors. Every sample of soy flour tested increased mixing tolerance appreciably. Some increased it as much as 35 percent. The best soy flours in this respect were of the full fat type.

EFFECT ON WHEAT GLUTEN

A characteristic of wheat protein which distinguishes it from other proteins is the property of combining with water to form elastic membranes which, more or less, have the ability to retain the gas produced during fermentation. This protein-water combination, called gluten, is the most critical portion of dough in producing high quality bread. Unless the condition of the gluten is just right, inferior bread results.

Ordinary doughs to which soy flour is added and handled in the usual manner, tend to have poorer gluten. This is due, in part, to the dilution effect previously noted and to a slight inhibiting effect that soy flour has on yeast action. However, the major reason for poorer gluten is the effect of soy flour on the gluten membrane. The gluten loses part of its ability to retain the gas produced during fermentation. This manifests itself in smaller loaf volume and coarser grain inside the loaf. The second phase of the study dealt with means of overcoming these difficulties.

The maximum gas retention of doughs containing soy flour was considerably less than for non-soy doughs. The maximum also occurred earlier in fermentation in soy flour doughs.

FORMULA AND PROCEDURE ADAPTATIONS

In order to utilize soy flour satisfactorily in the production of quality bread, cer-

Soy Played Big World Role

Soya products played a large role in maintaining world food stockpiles during and since the war. With the mission of UNRRA about completed the story of their contribution is only now coming out. A total of almost 400,000 tons of soy flour and grits from the U. S. A., the product of 18 million bushels of soybeans, entered lend lease and UNRRA shipments, according to Donald S. Payne, who helped set up the UNRRA program in Europe. Below are two photos of a nutrition conference at Padua, Italy, held under the joint auspices of UNRRA and the high commissioner for public health and hygiene. At top, a student nurse shows a sample of the ways in which soya may be utilized. At bottom, a tasting session for the people attending the conference. They are sampling soya products—biscotti, cakes, puddings, minestra and spaghetti.



A Midwest Farm in the

MISSISSIPPI DELTA

• A sketch of the American
Soybean Association direc-
tor from Mississippi.

By

MRS. DOROTHY LEE BLACK

(Reprinted from *Delta Council News*)

To hear a Yankee characterize a Southern crop as "too much work" is going against the tradition of what Yankees think about the South and what Southerners think about a Yankee.

But "too much work" for too many people is the reason why one Yankee - come - South has made his Delta plantation over into a typical Midwest farm. "No, indeed, no cotton for me. Of course I've got a little to satisfy some of my labor, but I'm farming for myself - and cotton's not in my set-up."

L. S. Stoner of Holly Bluff, Miss., meant exactly what he said: out of 3200 cultivated acres on his plantation, he planted a total of 100 acres to cotton last year and plowed up 15 of those when he couldn't get labor to hoe!

Mr. Stoner came to the Delta in early 1919, after a series of events and decisions that render the incredulity of an almost cottonless plantation in the Yazoo-Mississippi Delta a little less unbelievable. From Greencastle, Ind., through several years of railroad construction work, and finally on a pleasure trip to Yazoo City with the Delta landowner, Alfred Hirt, L. S. Stoner arrived in the rich and prosperous Delta country.

True to the spirit of America, this young man figured if others could make money, so could he; back to Indiana to marry his Lafayette girl and down to the South and 100 acres of land he could farm.

This Midwestern boy farmed the Delta way: he acquired more land; he expanded his operation; but he wasn't entirely happy.

"I kept feeling that with 16 families, nearly 100 tenants, I was a man with that many children and how could I make a living for that many folks?"



Harvesting scene on the Stoner farm. —Soybean Digest Photo.

When the 1927 water receded, Mr. Stoner had land, debts, and one laborer left. That was the straw that broke the camel's back. He bought two tractors and began to work toward the goal of complete mechanization.

With 100 acres cotton, about 300 out of production because of weather conditions at planting time, the farm is divided into 1400 acres each, oats and soybeans. Even though, last year, Mr. Stoner picked 710 bales of cotton off 500 acres of land he still prefers complete changeover to a non-cotton operation with wage hands and machines.

*"I WANT A MINIMUM NUMBER
OF WORKERS and I want to be able
to keep them busy all the time. The
workers can earn more, I earn more,
and everyone seems to be happier."*

Fifteen men, 11 combines, 21 tractors, and efficient handling equipment are the machines of these plantations. After soybeans are combined off a piece of land one day, the next morning tractors, disks, and planters follow, preparing land and sowing oats, this being done while soybeans are drying for the combines.

Turning under beans has been the process of fertilizing to date, though Mr. Stoner is thinking of using some commercial fertilizer in future operations, particularly if he adds corn to his cropping schedule.

All land is flat broken. This man is a firm believer in flat cultivation for the Delta, regardless of crop. This commentary is particularly interesting, since it confirms the recommendations of Delta Experiment Station regarding mechanized cotton cultivation and harvest.

Beans and oats are moved from the field to either railroad car or storage bin entirely by mechanical methods. Combine bins are emptied into trailers on the road. When

four or five trailers are full, they are pulled by tractor to place of unloading.

Mr. Stoner this year will try a screw type conveyor-blower device for unloading from the wagon and, should he find that this machine injures bean seed, he can continue to unload into the tractor-powered elevators now in use. These elevators and blowers are concrete proof that here is a Yankee farmer moved South—as he is, for this type of equipment is standard on the average Midwest farm but uncommon in the South.

"Care of machine, preparation of land, and the handling of production are the items in farming that call for work. Any crop will grow if the farmer has spent ample time in preparing the seed bed, conditioning, handling, planting, and covering the seed. Harvest must be so planned and organized that there is no waste of time nor duplication of effort."

Mr. Stoner is a staunch advocate of keeping machines under cover, well greased, and in top-notch condition. He even looks for probable weak spots in construction so he can watch for trouble during operation.

L. S. Stoner has some very definite ideas on reduction of number of laborers per farm unit, and the desirability of higher per capita income. His philosophy is that if a man can't stay in business on a free, competitive basis, he had better do something else. On a 2-year, oat-bean rotation program, at present prices, Mr. Stoner conservatively estimates he can get a 30-dollar per acre net return, counting against his gross return taxes, depreciation, all expenses.

When asked why he didn't put some cattle on his oats, rather than clipping them, Mr. Stoner replied he was looking for less work, not more!

Two sons and a son-in-law, when all
(Continued on page 26)

MENU OF THE MODERN FOWL

By J. E. HUNTER

To some it may sound a bit far-fetched to talk about a menu for a chicken. The present day tag on a bag of feed is actually a chicken's menu. Many people have foolish ideas about a chicken's menu. A well-known writer not so long ago wrote "I would like to take a hundred baby

chicks and two bags of cracked corn and go into the broiler business." He just doesn't understand a chicken's menu. His broilers on such a diet would not likely survive long enough to be eaten.

Oscar of the Waldorf never paid more attention to a menu for a meal than the modern nutritional scientist gives to the making of proper feeds for poultry. The requirements of poultry for the known nutritional factors have been well-worked out by research workers in laboratories where chicken is king. Nutritional requirement information, coupled with a realization of the nutritional value of ingredients, has made it possible to produce menus for poultry that are producing better results than ever before because they are complete.

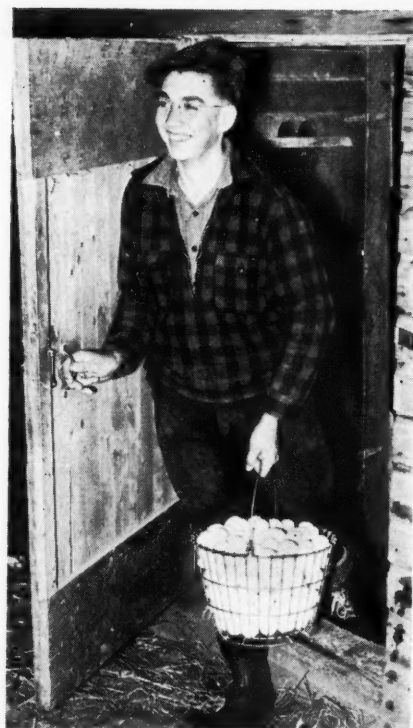
Soybean oil meal appears as the entree on most menus for the modern fowl. It does an excellent job in helping to make poultry diets complete. It supplies lots of protein of high biological value so necessary for the production of poultry, meat and eggs. Soybean oil meal is served to poultry with a variety of other things on the menu. The necessary carriers of vitamins, minerals, animal protein, and carbohydrates all appear on the fowl's menu and when consumed in the form of a complete feed enable poultry to live, grow, and produce at a level that is profitable to the poultry keeper.

Soybean oil meal has been spoken of as the *MIRACLE INGREDIENT*. Actually there is nothing miraculous about the product. It is an excellent protein source containing all of the required amino acids. By itself it cannot do an efficient job but when presented to fowl on a menu along with everything else required, it can do tricks in supplying the necessary high quality protein.

SOYBEAN OIL MEAL WAS LEAST SCARCE

World War II placed a heavy burden on soybean oil meal. All proteins were scarce but other protein carriers became relatively more scarce than soybean oil meal. Animal and marine protein concentrates were insufficient in supply, but nutritional scientists knew that soybean oil meal could be used in abundance in poultry feeds if it could be supplied along with relatively small quantities of animal and marine proteins. The intelligent usage of available protein supplies resulted in menus for poultry that helped in breaking all previous records of growth, livability, egg production and hatchability.

The working relationship between soybean oil meal and animal or marine pro-



Soybean oil meal played a large part in the record egg production during the war.

tein has been greatly clarified by the recent discovery of a new vitamin factor present in animal and marine protein products, and known as the animal protein factor. The supplying of adequate amounts of the animal protein factor along with plenty of good soybean oil meal goes a long way towards making the menu of the modern fowl complete.

The domestic fowl does not consume her meal from snowy table linen and is not interested in crystal and fine silver, but is just as much concerned with the items on her menu as we are with ours. Soybean oil meal as the entree, listed along with other necessary ingredients required by the present day fowl, will enable her to live happily and return the kind of profit to her owner to which he is entitled.

— s b d —

STONER

(Continued from page 25)

get home from the Service, will farm the place. Mr. Stoner says he's going to do a little traveling.

Mr. Stoner disclaims any credit for progress, or vision, or foresight. He says merely that he worked too hard as a Yankee farmer and he worked too hard as a Southern cotton planter.

"So I just combined the two: I put Middlewest machines on Delta soil, and here I am."

And here he is—an example of the efficiency and economy of mechanized farming and an exemplification of successful diversified farming in a cotton country.

SOYBEAN DIGEST

By HEARTSILL BANKS

I had read a book about Korea. In fact, I had read several.

I knew they raised rice on small plots, on hillside fields, that they transplanted it by hand, weeded it and harvested it, threshed it and largely milled it by hand. All these things I knew from the literature, together with the fact that rice, in addition to being the main food item, was practically the life-blood of Korean agricultural economy.

But I was unprepared for the rice straw. After all, rice as all other small grains, has straw. Straw is used by the better U. S. farmers to supplement the humus supply (and burned by the more improvident ones.)

But Korean rice straw is something else again. In the first place, the farmer cuts the rice by hand with a sort of sickle. He gets right down next to the ground to get every possible bit of the straw. Then he threshes the rice off of it by poking the heads in a cylinder and pulling back the rest of it. Some small farmers simply pull the heads through a comb-like arrangement. At no time in the threshing operation is the straw allowed to be chewed up or matted. Then it is stored in bundles and the real use of it begins.

The three uses that take the biggest bulk of straw are bags, rope and roofing. It's all a home and fireside job.

The straw bags—about 22 million per year—are from 2 to 4 bushels in size. They are made of plaited straw and fastened by folding the opening and wrapping with straw rope. They are used for everything from firewood to fertilizer. No other kind of bag or sack is seen.

Now, this straw rope is something special; made either on a small foot-operated machine or entirely by hand. It is only good for one season, but makes fuel after it is worn out, so nothing is wasted. One spectacular use of it is to tie poles together to make scaffolding. Right now one parapet on the National Capitol Building is undergoing repair. Hundreds of feet up in the air is erected this scaffold of slender poles and straw rope.

• The author, until last summer manager of the soybean division of the Ralston Purina Co.'s. Kansas City plant, is now in charge of rice experimentation and breeding work for the U. S. War Department in the American occupied territory in Korea.

— USES OF KOREN RICE STRAW

IN BAGS, ROPES AND ROOFS

Roofs thatched with rice straw are common in the country and on the cheaper city houses (the only other type of roof is tile.)

But don't think that this exhausts the use of straw in Korea. They chop it up, cook it with a few grains and beans, and feed it to their work animals. They weave it into all manner of baskets and mats. They make slippers, rain hats and rain coats out of it, and part of the harness for the work ox.

They use rice straw to bank the house

for warmth in the winter and later, of course, for fuel.

And if old man Jay-Eye Case or his successors would send over a dozen modern threshing machines complete with belts and power units, it would be 100 to 1 that none of them would operate a season. Because Mr. Kim (the Korean John Doe) would absolutely refuse to let his rice straw be chewed up by the separator teeth.

He needs that straw to maintain his existence.

*"Look, Dad-
I've got a check
for growing
seed potatoes!"*



• Nobody had ever grown seed potatoes in this section before.

But good crops of table potatoes were raised, and soil, climate and location were right for the production of seed potatoes.

So one day a railroad agricultural agent, working in close cooperation with the county agent and the State Agricultural College, talked to local farmers about the opportunity and how to capitalize on it.

It was decided that some of the Future Farmers and 4-H Club boys should try growing the seed on a small scale. Experience had proved that this reduced the initial risk by enabling the farmer gradually to learn the

best way to produce disease-free, certified U.S. No. 1 seed.

Working with the State Extension Services and with farmers along their lines in this way is typical of American railroads. Similarly, in different sections all over America, railroads have worked to increase the efficiency of farm production, improve the quality and help the sale of market lambs, poultry, dairy cattle, and other livestock; lettuce, peaches, grapes, soybeans, and scores of other crops.

This is additional evidence of the real partnership of farmers and railroads in the business of growing and distributing the agricultural products which America needs.





At the conference, program of the U. S. Regional Soybean Laboratory is described by J. L. Cartter, director. At his left is H. D. Hughes, professor of agronomy at the Iowa State College; at his right, W. J. Morse, principal agronomist of the Bureau of Plant Industry.

CONFERENCE

(Continued from page 15)

No. 1 problem in using soybean oil in the margarine and related foods industries, the conference was told by Paul T. Truitt, president of the National Association of Margarine Manufacturers, Washington, D. C., and G. A. Crapple, chairman of the research committee of the Margarine Association.

Soybean oil now constitutes almost half the total of all oils used in margarine, but the oil is not yet stable enough for the best use in this product, Truitt said.

Soybean oil causes little trouble in margarine now because of the extremely rapid turnover, the Margarine Association president said. There is a demand for twice the amount of margarine now produced. But when production catches up with demand there will be trouble unless the flavor stability problem is solved in the meantime, in Truitt's opinion. He said manufacturers want to produce a margarine with a shelf life in grocery stores of 6 weeks.

"We have gone beyond what we consider the safe limit in the use of soybean oil in margarine," Crapple said. "We have said that margarine is not safe if more than one-third of the oil used is soybean oil." He said he feared the problem of flavor stability will not be solved in time unless fundamental research on the subject is expanded.

Francis Scofield of the National Paint,

Varnish and Lacquer Association discussed the use of soybean oil for industrial purposes. He said the paint and varnish industries normally use large quantities of soybean oil in products which cannot be made satisfactorily from other oils. There is no good substitute at any price for soybean alkylid resins in some varnishes, according to Scofield. He said the paint industry can use soybean oil without much difficulty to fill 10 percent of its oil requirements.

Scofield stressed the need for *fundamental chemical studies of the composition of soybean oil.*

LIVESTOCK FEEDING

For some time to come 90 percent of soybean oil meal will be used in livestock feeding, said J. W. Hayward, chairman of the Soyfood Research Council, in his discussion of problems in the use of soybean oil meal for food and feed. Dr. Hayward emphasized that this fact should not be overlooked in developing research programs. He felt *additional research is necessary in the use of soybean oil meal in poultry and swine feeding.*

Concerning soy flour, Hayward suggested that research projects might: *express numerically some of its specific observable functions in baked goods; determine the effect of using different varieties of soybeans in soy flour; explore methods of manufacturing to see if it is economically possible to effect further improve-*

ments in quality; and develop better consumer acceptance for foods containing soy flour.

RESEARCH REPORTS

Reports on active research projects were given by:

J. L. Cartter, director of the U. S. Regional Soybean Laboratory, Urbana, Ill.

W. L. Burlison, head of the Department of Agronomy, University of Illinois, and

R. T. Milner, of the Northern Regional Research Laboratory.

Cartter said the Regional Soybean Laboratory now has soybean nurseries at 44 locations in the Northern states; and at 52 locations in the Southern states.

He said newer strains developed by the Laboratory and various state experiment stations will rapidly replace varieties now in use as their value is realized by growers and seed becomes available.

The Laboratory is conducting cooperative soybean disease work in 11 states, according to Cartter. He said experience indicates that from a disease-control standpoint soybeans should not follow soybeans in the rotation at shorter than 4-year intervals.

Dr. Burlison reported 370 active soybean research projects now being carried on by state experiment stations.

These projects are in the fields of agronomy, animal husbandry, horticulture, chemistry, home economics, botany and physics, pathology, agricultural engineering, agricultural economics, and genetics, he said.

Dr. Milner reported that a large part of the time and effort of the Northern Regional Research Laboratory is now being devoted to research on flavor stability of soybean oil. The Laboratory has been carrying on this work for 11 years, and encouraging progress has been made the last 2 years, he said.

German processing and refining methods offer some promise in solution of the problem, according to Milner. These methods were studied by W. H. Goss in an investigation of the German oilseeds industry for the Joint Chiefs of Staff in 1945. Milner said fractionation also offers a partial solution.

He did not believe a simple test for measuring the oil content of soybeans could be developed in the near future.

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FOREIGN COMPETITION

Big imports of soybeans, oil and copra from the Far East are not an immediate prospect, Roy F. Hendrickson, of the National Federation of Grain Cooperatives, told the annual meeting of the Farmers Grain Dealers Association of Iowa in Des Moines, Iowa, in late January.

Only the Philippines will be a factor in 1947 world oil supplies, said Hendrickson.

USDA MEN WHO HAVE CONTRIBUTED TO SOYBEAN DEVELOPMENT



"AL" PROBST



PROBST IS FEDERAL SOYBEAN BREEDER IN HIS HOME STATE

Albert H. Probst, a member of the scientific staff of the U. S. Regional Soybean Laboratory for Indiana, has been doing agronomic work for this organization since May 1, 1936, all of the time in Indiana. In cooperation with Purdue University he has done work of great importance in developing the crop in that state.

Probst and Dr. G. H. Cutler of the Indiana Agricultural Experiment Station, working cooperatively, have developed three new superior varieties—Gibson, Patoka, and Earlyana. Gibson and Patoka are good oil varieties. In the southern and south central parts of Indiana, where only forage types were grown until recently, they are providing a new cash crop. Probst and Cutler developed the Earlyana, a quick-maturing industrial type, for northern sections of the Cornbelt which is now doing well there.

By developing these new heavy yielders with a high percentage of good quality oil Probst and the other agronomists with whom he has worked have not only helped greatly in stabilizing Indiana agriculture but have given the entire soybean industry a better foundation.

Mr. Probst was born in Indiana, at Lawrenceburg in 1912. He has the degrees of B.S. and M.S., both from Purdue University. He lives at Lafayette.

SOUTHERN CONFERENCE

Representatives from 10 states attended the Southern Regional Soybean Conference in Memphis, Tenn., February 6 and 7.

New soybean varieties to be tested at agricultural experiment stations were discussed.

"Soybeans represent a prospective use for some of our second-grade land that is too hazardous for cotton."

This evaluation of one of the Mid-South's newest crops was made by C. R. Sayre, superintendent of the Delta Branch Experiment Station at Stoneville, Miss., in an address before the Conference.

"In appraising the importance of soybeans in the Mid-South too many farmers have looked at historical acreages and yields, rather than the potentialities the crop may hold when it is fitted around the cotton enterprise on Delta farms," Mr. Sayre asserted.

"Soybeans have been on the third team when you consider the prevailing farming system in much of the Mid-South," he continued. "This does not detract from their importance as a farm enterprise for which improvements are needed from research."

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SEED ENOUGH IN OHIO, IND.

By J. W. CALLAND

Director of Agronomic Research
Central Soya Co., Inc., Decatur, Ind.

Presented at the Seventh Annual Conference of Ohio Processors and Agronomists at Wooster, Ohio March 14.

When almost overnight the price of soybeans advanced a dollar a bushel last October, it was feared that many growers would market not only their surplus beans but also the beans they would normally hold for seed. Some growers did this, thinking they could buy cheaper seed by planting time. It looks now like that was a mis-

take. Even some farmers who were producing certified soybeans decided to throw their certified beans on the market along with the rest. It is doubtful, however, if many actual seedsmen did this.

Now, with soybeans still selling well above \$3 a bushel and the government asking for a greatly increased acreage for 1947, there is much speculation about the supply of soybean seed. In order to see if the farmers of northwestern Ohio had kept back enough seed to plant an increased acreage in 1947 we arranged to cooperate with the extension and agronomy departments of Ohio State University in conduct-

ing a survey of farmers intentions in 16 of the leading soybean counties of Ohio. Questionnaires were sent to several hundred farmers in each of these counties. These questionnaires were designed mainly to determine the cultural practices used on the 1946 soybean crop, but they also asked seven questions about 1947 intentions.

1. Do you intend to grow soybeans in 1947?

2. What variety or varieties?

3. The acreage of each variety?

4. The method of planting, solid or in rows?

5. Do you have your own seed?

6. Will you have extra seed? If yes, what varieties and how much?

7. Do you think there is enough soybean seed in your locality?

One thousand, three hundred and fifteen farmers who either grew soybeans in 1946 or intend to grow them in 1947 answered and returned the questionnaires. This is an average of 82 growers to each county and is probably a fairly good cross-section of intentions in northwestern Ohio.

MOST WILL GROW SOYBEANS

Ninety-four percent of these farmers intend to grow soybeans in 1947. They grew 43,900 acres in 1946. In December and January, when they received the questionnaire, they intended to grow 41,900 acres in 1947—an indicated reduction in acreage of 5 percent. Eighty-five farmers who grew soybeans last year do not intend to grow them in 1947, but 47 who did not have soybeans on their farms last year plan to grow them this year.

Ohio growers plan to plant 58 percent Lincoln, 14 percent Richland, 7 percent Earlyana, 7 percent Manchu, 5 percent Mandell, 4 percent Dunfield, 3 percent Illini, Wisconsin Manchu, Mingo, Mandarin, Wilson, Mukden, Scioto, Kabott and Canadian, while the remaining 1 percent were undecided as to variety.

If their intentions are carried out 74 percent of their 1947 soybeans will be planted solid and 26 percent in rows. This compares with 80 percent solid and 20 percent in rows in 1946.

Eighty-five percent of those intending to grow soybeans this year have their seed, 14 percent do not, the balance of 1 percent failed to answer this question.

Since the average grower plans to plant 34 acres of soybeans, the 14 percent without seed will need 8,752 bushels if they use an average 1½ bushels of seed per acre.

Twenty-seven percent of those having seed will have extra seed amounting to 41,553 bushels. At the same rate of planting, this is more than four times as much seed as the 14 percent without seed would need. This extra seed is 64 percent Lincoln, 9 percent Earlyana, 9 percent Richland, 8 percent Dunfield, 4 percent Man-

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chu, and 3 percent Mandell, with a half dozen varieties making up the remaining 3 percent.

This leads us to the conclusion that, if the survey gives a reasonably accurate picture of the soybean seed supply in northwestern Ohio, there is in the hands of farmers sufficient seed to plant the 1947 crop, provided, of course, it can be properly distributed.

Thirty-six percent of the growers thought there was enough seed in their locality, 21 percent thought there would be a shortage of seed locally, while 44 percent said they were not in position to answer this question.

INDIANA REPORT

Editor's Note: A report of an Indiana survey, similar to the Ohio survey reported by Mr. Calland, reaches us as we go to press. Over 40 percent of Indiana growers answering the questionnaire believed there is enough seed in their own localities; 15 percent reported a local seed shortage; 45 percent did not know.

About 33 percent of Indiana growers reporting said they would have seed for sale. The indicated total is 45,585 bushels; almost 19,000 bushels of this amount is certified seed.

From this survey it would seem that the Indiana situation is a little better than that in Ohio.



Plant of Hemphill Soy Products Co., Hemphill, Mo., has storage capacity of 500,000 bushels and crushing capacity of 81 tons daily. The firm completed construction of 14 concrete tanks and a Quonset type storage for soybeans last season, and added a third Anderson expeller. W. A. Hemphill is president and manager of the firm; Wm. B. Hemphill, vice president; and J. A. Hemphill, secretary-treasurer.

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Publications

Germination Studies

RELATION OF TEMPERATURE AND SEED MOISTURE TO THE VIABILITY OF STORED SOYBEAN SEED. *Circular No. 753*. U. S. Department of Agriculture. Washington, D. C.

Despite the importance of the soybean crop, comparatively little has been published on the behavior of the seed in storage.

An experiment was started in 1934 to determine the effects of storage temperature and moisture content of soybean seed on longevity. The experiment was carried on for 10 years.

Results obtained show the hazard of attempting to keep for planting soybean seed with high seed moisture or stored at high temperatures.

The experiment showed, however, that full viability and vigor can be maintained for at least 10 years by storing dry seed at low temperatures. This information should help farmers and seedsmen to avoid unnecessary losses. Plant breeders, also, will be interested in the possibility of preserving valuable seed stocks for long periods.

Seed of Mammoth Yellow and Ootootan soybeans grown in North Carolina in 1933 was adjusted to four different moisture contents and stored at five controlled temperatures. The moisture content was maintained by sealing the seed in glass fruit jars with rubber seals. The seed was

stored in February 1934 and tested at intervals until February 1944.

The two varieties gave essentially the same results.

Seed with approximately 18 percent moisture was dead in 1 to 3 months at 30° C., in 5 to 9 months at 20°, and in 2 years at 10°. At 2° this seed maintained nearly full viability for 2 to 3 years, but it was dead in 6 years. Nearly full germination was obtained after 6 years at -10°, but the seed was worthless for planting after 10 years.

With the natural moisture of approximately 13.5 percent the seed was dead after 5 months' storage at 30° C. and after 2 years at 20°. Full viability was kept for 3 years at 10°, but germination fell rapidly after that. Practically full germination was maintained for 10 years at 2° and full germination at -10°.

Seed dried to 8 to 9 percent moisture showed little or no loss of germination when stored at 30° C. for 1 year, but the fall in germination was very rapid after 1 year. Seed stored at 20° germinated 90 percent after 5 years and lost viability gradually in subsequent years. This seed stored at 10°, 2°, and -10° did not change in germination in 10 years.

Seed dried from approximately 13.5 to approximately 5 percent in 44 hours showed severe injury to germination when stored at low temperatures.

GERMINABILITY OF SORGHUM AND SOYBEAN SEED EXPOSED TO LOW TEMPERATURES. By Wayne A. Robbins and R. H. Porter, Iowa Agricultural Experiment Station, in *Journal of the American Society of Agronomy*.

Both soybeans and sorghum have been planted at times from May to August in Iowa. Since early, medium and late varieties have been available, there has been considerable variation in maturity at first killing frost.

Attempts to save seed without regard to its condition in the fall has often resulted in low viability. For this reason a study was made of the effect of freezing temperatures on the viability of soybean and sorghum seed which differed in stage of maturity and moisture content.

Results indicated that viability of immature seed of both sorghum and soybeans was reduced by exposure to low temperatures. The lower the temperature and the higher the moisture content the lower the vitality of the seed, it was indicated.

Soybean seed in small lots with a moisture content of 30 to 32 percent or less was not reduced in viability by freezing for 10 hours at -20° F. At 20° F. no injury occurred to seed of most varieties with a moisture content of 50 to 60 percent. Soybean seed may contain a much higher percentage of moisture than sorghum without being injured by exposure to freezing temperatures.

Effect on Soil

EFFECT OF CORN, SOYBEANS, THEIR RESIDUES, AND A STRAW MULCH ON SOIL AGGREGATION. By R. S. Stauffer, department of Agronomy, University of Illinois. *Journal of American Society of Agronomy*.

A study was made of soil aggregation as affected by growing corn, growing soybeans, a mulch of wheat straw, corn stalks broken down across the slope after harvest, soybean straw spread on the respective plots after threshing, and season. A comparison was also made of the aggregation in the thin surface layer of soil, about $\frac{3}{8}$ inch thick, with that in the $\frac{3}{8}$ to 5-inch layer.

The thin surface layer of soil, approximately $\frac{3}{8}$ inch thick, contained a smaller percentage of aggregates, particularly of the larger sizes, than the $\frac{3}{8}$ to 5-inch layer. These results confirm the conclusions of others that the surface soil becomes dispersed, particularly if there is no protective cover on the soil.

The mulch of wheat straw definitely favored the formation of the larger aggregates. The soybean straw and the corn stalks remaining on the soil over winter seemed to favor aggregation but did not increase significantly the percentage of aggregates.

The soil on the corn plots contained a

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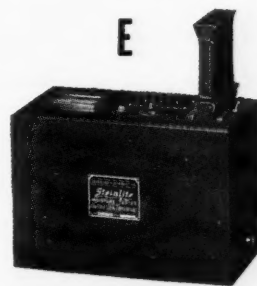
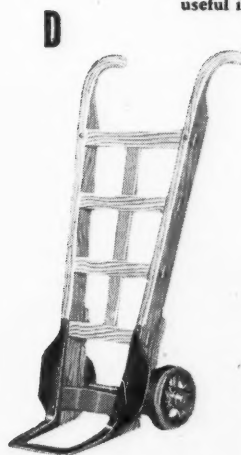
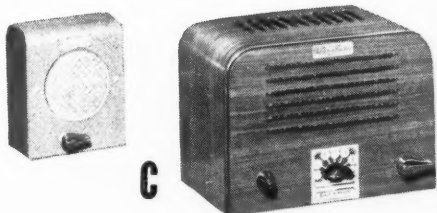
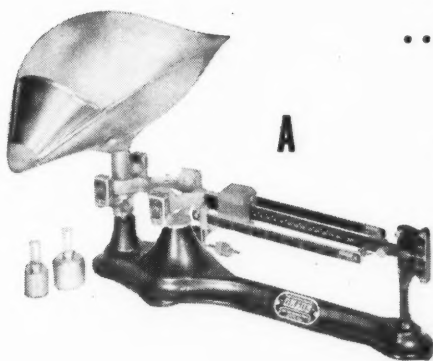
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C Seedburo's line of Inter-Communication Systems includes types to fit practically every need. Save yourself and your employees many hours of valuable time. Send in complete information about your needs. Our Engineers will study your problem and recommend the proper inter-communication system to fill your need. No obligation.

D Bag Trucks in a wide selection of types and sizes—all steel and wood with wrought iron nose, rubber tires and metal wheels. The Minneapolis Bag Truck (illustrated) is available in 3 different sizes. Particularly useful in handling large, bulky sacks and boxes.

E The Steinlite Moisture Tester is the modern electronic instrument for making moisture tests. Without specialized knowledge an operator can make an accurate test in one minute. Shipped on 10 day trial basis. No money down. In stock for immediate shipment.

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higher percentage of aggregates larger than 0.50 mm than that of the soybean plots.

On the corn plots the percentage of aggregates larger than 0.50 mm increased during the four years the experiment was in progress. On the soybean plots there was a decrease except on those plots receiving a mulch of wheat straw.

Storage

GRAIN STORAGE STUDIES. IV. BIOLOGICAL AND CHEMICAL FACTORS INVOLVED IN THE SPONTANEOUS HEATING OF SOYBEANS. M. Milner and W. F. Geddes (Univ. Minnesota, St. Paul). *Cereal Chemistry* 23, 449-70 (1946).

Surface sterilization of the seeds failed to eliminate mold infection, whereas inoculation of auto-clave-sterilized soybeans with spores of *Aspergillus flavus* yielded heating and respiration curves virtually identical to those of normal seeds.

Spontaneous heating of sterile seeds in which no microfloral activity had occurred was demonstrated. Chemical changes in the heating seeds assayed at intervals in the course of the trials indicated a disappearance of total sugars in the initial biological phase of heating and an increase in reducing substances in the initial spontaneous chemical heating phase.

The petroleum ether-soluble fraction remained virtually unchanged in the biological heating stage but decreased markedly in the chemical heating phase, without a corresponding loss in dry matter content of the seeds. Respiratory quotients associated with the gas exchange during the spontaneous chemical heating phase suggest the occurrence of thermally induced oxidative cleavage of carbohydrates as well as oxidative polymerization of the seed oils.

Frozen Soybeans

VEGETABLES RETAIN MAXIMUM FLAVOR ONLY WHEN PROPERLY BLANCHED. *Fifty-seventh Annual Report*, Georgia Experiment Station, Experiment, Ga.

Asparagus, snap beans, lima beans, soybeans, peas, and okra were blanched, prior to freezing, for 2, 4, 6, 8, and 10 minutes by steam and boiling water. Tests of aroma, texture, flavor, and appearance were determined at the end of 3, 6, 9, and 12 months. Some of the products were blanched under 10 pounds of steam pressure for 1 minute.

In most of the products, 2 minutes blanching resulted in highest flavor; in others where the individual pieces were larger, 3 or 4 minutes blanching was best, but in all products over-blanching was very detrimental. Blanching, extended to the point of precooking, resulted in vegetables of little aroma or flavor, the color was very unattractive, the peas and beans became

mushy, and the other vegetables partially disintegrated.

Missouri

SOYBEANS FOR MISSOURI. *Bulletin* 491, Missouri Agricultural Experiment Station.

The Boone variety of soybeans bred and developed by the Missouri Station on a statewide basis has contributed substantially to the utility of soybeans as a Missouri crop. The soybean improvement program under the supervision of B. M. King has been concerned with the testing of varieties for seed production, the testing of strains developed by the Station for hay and seed production, and the breeding of new strains by hybridization and selection.

Scioto with an acre yield of 21 bushels led all varieties at Columbia. Highest seed yields at Sikeston were obtained from Ral soy, Arksoy, Arksoy 2913, and Ogden. Hay strains S. 55-10 and S. 55-12 substantially exceeded other strains in the production of field cured tonnage per acre.

In seed yield tests, these strains exceeded Chief, the highest yielding check variety, by several bushels per acre. Strain S. 55-10 will be increased in seed for distribution to farms.

A total of 1,675 progenies of 62 different hybrid crops were grown in plant-to-row plots. Approximately 200 of these were selected for further study in 1944. The progeny of 20 crosses made in 1941 were advanced to the third generation. Lincoln, an early type excellent in composition for processing, was crossed with several other productive varieties. The possibility of developing a productive early strain, excellent for processing, is very promising.

In Meat Loaves

CEREAL EXTENDED GROUND PORK MEAT LOAVES: THEIR PALATABILITY, by N. Hotaling and F. Fenton, Cornell University. *Journal of Home Economics*.

This study was made to determine the greatest extent to which cereals could be substituted for meat in ground meat loaves. Fresh, frozen and canned meat loaves were studied.

Soy flour and grits, oats, wheat kernels and a mixture of equal weights of rolled oats, soya grits and shredded wheat were the cereals used. Other ingredients such as eggs, wheat germ, brewer's yeast, etc., were added in varying amounts to ground pork.

The formula is given for soy-extended loaf containing about 18 percent soy grits and having the highest nutritive value.

The wheat-extended loaves scored less than the soy-or-oat-extended loaves, the flavor being less like meat. Loaves made with the cereal mixture scored lower than did those with the soya grit extender.



This Advertisement **SELLS** Your **SOYBEANS**

*With the development and promotion
of Spencer Kellogg soybean products:*

**SOY FLOUR
SHORTENING
SALAD OIL
SOY BEAN MEAL**

*The market for your soybeans
is increased*

★ ★ ★

Reprinted on the opposite page is a soy flour advertisement, one of a series appearing monthly in leading Bakers' Publications having a combined circulation of 51,450 bakery owners. As a result, leading bakers throughout the United States are encouraged to try new soy flour recipes and use more soy flour. Likewise, in other fields, for both edible and industrial soybean derivatives, Spencer Kellogg and Sons, Inc. is actively advertising the advantages of soy products for the ultimate benefit of the grower.

SPENCER KELLOGG and Sons, Inc.

"The First Name in Vegetable Oils"

Buyers and processors of soybeans, millers of soybean flours and meal, refiners of edible soybean oil, producers of soybean shortenings, manufacturers and refiners of industrial soybean oils, researchers and developers of new and valuable soybean products.

**SPENCER KELLOGG SOYBEAN PLANTS
ARE LOCATED AT:**

BUFFALO, N. Y.

DECATUR, ILL.

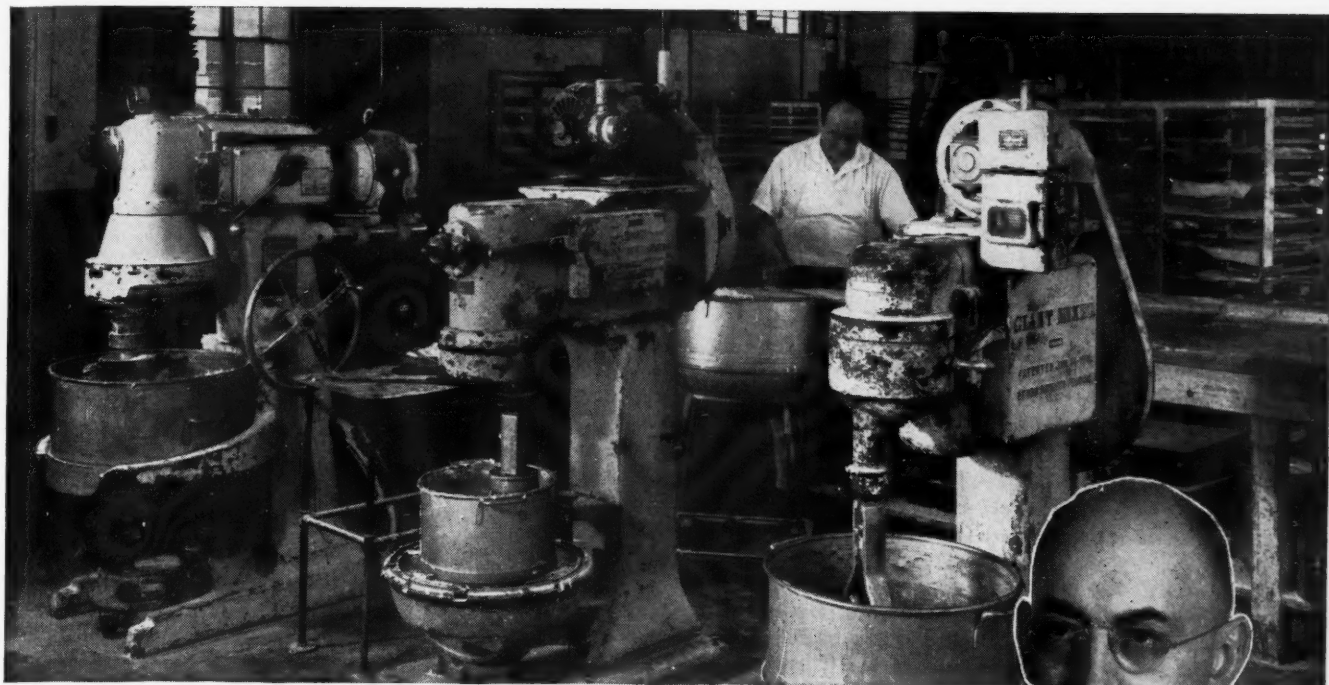
DES MOINES, IOWA

BELLEVUE, OHIO

CHICAGO, ILL.

MINNEAPOLIS, MINN.

SOYBEAN DIGEST



*"We Use Soyflake
... and we like it."*



"For one thing—we make tasty and tender pie-crust. Using 25% Soyflake we get good crust color without a wash. Soy makes it easier to turn out a superior product.

"Our 10% Soyflake bread is a good seller...and at a 5¢ premium. In my opinion, the quicker bakers get acquainted with soy flour and use it, the better off they will be."

FREDERICK C. WILLIAMS

Vice-Pres., Goode Cake Shops, Buffalo, N. Y.



A Little Soy Flour Works Wonders

These amounts are recommended for definite improvement of quality: 3% in bread—3 to 5% in rolls—5 to 10% in sweet goods—10 to 15% in cakes, cookies, pastries.

FREE OFFER

You'll like Sunsoy Soyflake once you use them. Drop us a postcard for free working sample and Idea Book of practical soy flour formulas.



SPENCER KELLOGG and Sons, Inc.
SOY FLOUR DEPARTMENT • DECATUR 80, ILL.

GRITS and FLAKES...

FROM THE WORLD OF SOY

Capacity of Louisville Soy Products Co., Louisville, Ky. will be increased from 75 to 100 tons daily, announces Harold A. Miller, president. Enlargement cost will be about \$30,000.

* * * *

Ed Jappe, secretary-treasurer of Marianna Sales Co., Memphis, Tenn., was reunited recently with his sister, Miss Madeleine Jappe, whom he had not seen in 11 years. Miss Jappe came from Rotterdam, Holland to live with her brother.

* * * *

Report of the Illinois farm acreage census for 1945 has been issued by the Illinois crop reporting service. Soybean acreage reported: for beans, 3,754,387; hay, 277,777; plowed under, 28,798.

* * * *

Chase Bag Co. held its annual managers conference at the Palmer House, Chicago, February 6-8. R. N. Connors, vice president and general sales manager, was in charge of the meeting.

* * * *

R. L. Sherman, president and general manager of Myers-Sherman Co., Streator, Ill., died suddenly recently. Mr. Sherman was co-founder of the company which has been engaged for over a quarter century in the manufacture of Fords hammermills and other apparatus.

* * * *

S. O. Sorenson, Archer-Daniels-Midland Co., Minneapolis, addressed the February meeting of the New York Paint and Varnish Club on the subject, "Soybeans, Myth or Fact." His talk dealt with various applications of soybean oil to the paint and varnish industry.

* * * *

Chas. T. Taylor & Co., grain, feed and commodity jobbers and brokers in Los Angeles, Calif., are opening a branch office at 228 E. Tulare St., Tulare, Calif., under the management of Thomas Chrysler.

* * * *

A. E. Staley Mfg. Co., Decatur, Ill., has appointed Kane Advertising, Bloomington, Ill., to handle trade and consumer advertising for its feed division.

* * * *

St. Regis Paper Co., New York, has announced the formation of a new sales district in its multiwall bag division. The Mid-Atlantic district will have headquarters at Allentown, Pa., and will be under the supervision of Burton A. Wood.

* * * *

Bemis Bro. Bag Co. has announced the retirement of Edwin B. Fish from the Salina, Kans., office, where he has been in charge of northern Kansas sales for more than 30 years.

* * * *

R. D. McAusland, Seattle, was elected a vice president of the Bemis Bro. Bag Co. at the February 7 meeting in St. Louis.

* * * *

Chemical Publishing Co., Inc., 26 Court Street, Brooklyn 2, N. Y. has issued its 1947 catalog. The catalog includes the latest books on chemistry, technology, physics, general

INVESTMENT FIRM: "GIVE EMPLOYEES STAKE IN BUSINESS"

American business and industrial management is not doing effective work in educating its own personnel in the economic foundations that underlie the American way of life, Merrill Lynch, Pierce, Fenner & Beane, national investment firm, warns in its seventh Annual Report made public by Winthrop H. Smith, managing partner.

"Too few organizations have given their workers a tangible stake in the success of the business or made them feel individually important," Charles E. Merrill, directing partner, states in a signed foreword. "With the present experience of England and France before us, it is tragic that business in America has accomplished so little in this respect."

Following the firm's policy of full financial disclosure, the Annual Report gives a detailed breakdown of Merrill Lynch's 1946 operations. The Report discloses a 30 percent increase in the number of accounts handled and a rise of \$1,431,676 in gross income to \$29,523,668, a new record for the Stock Exchange member firm. An increase in all expenses, led by salary payments of \$9,930,546, up \$2,256,320 from 1945, caused net income before taxes to decline from \$8,834,063 in 1945 to \$6,216,649 last year.

Merrill Lynch paid a bonus to employees of \$1,351,121 and contributed \$606,287 to the employees' profit sharing plan in 1946 Mr. Smith noted. It is estimated that aggregate individual income taxes on each partner's share of net income will amount to \$5,000,000, leaving net income after taxes of \$996,757 for the firm's 81 partners. This compares with \$1,288,887 after taxes in 1945.

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Intelligent and Honest Brokerage Service Since 1908

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CRUDE AND REFINED VEGETABLE OILS

CARL H. SMITH

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Our Organization Will Complement Your Own to Buy or Sell

SOYBEANS-- *then don't forget this*

No question about it — seed inoculation is the most effective crop insurance that a soybean grower can give himself. Take no chances when buying inoculant. Insist on getting the brand that has helped to grow bumper soybean crops for thousands of farmers year after year.

LEGUME-AID

The strains of bacteria in this famous inoculant are field selected, laboratory checked and crop tested. The scientifically devised inner-lined carton package protects their potency. The LEGUME-AID unit for soybeans contains exactly enough to inoculate five bushels of seed. Order what you need. Open each package fresh as you treat each batch of seed. No waste, no loss, no troublesome measuring. Tell your dealer you want LEGUME-AID.



AGRICULTURAL LABORATORIES, Inc.
1239 Chesapeake Avenue COLUMBUS 2, OHIO

The INOCULANT in the CARTON

MARCH, 1947



science, mathematics, engineering, foods, formularies, drugs and cosmetics, medicine, metals, technical dictionaries, etc., as well as college and other textbooks. Copies are free.

* * * *

"Using Soybean Lecithin in the Macaroni Industry" Part I, by J. J. Winston and B. R. Jacobs, National Macaroni Manufacturers Association, is an article in February *Food Industries*.

* * * *

Whip Topping, frozen soy cream product of the Rich Products Corp., has been awarded seals of *Good Housekeeping* and *Parents' Magazine*.

* * * *

Winter issue of *PROGRESS THRU RESEARCH*, General Mills, Inc. publication, contains an interesting article on "Fatty Acids" by Dr. Ralph H. Manley, the firm's director of research.

* * * *

V. F. Radcliffe has been transferred to the Detroit sales staff of Chase Bag Co. from the New York sales office of the firm.

* * * *

Steve Cottraux has been transferred to the Buckeye Cotton Oil Co.'s soybean mill at New Madrid, Mo., as manager. He was formerly manager of the Buckeye mill at Jackson, Miss.

* * * *

Two expellers are being installed at the Nashville Cotton Oil Mill, Nashville, Tenn., to enable the mill to crush both soybeans and cottonseed. Soybeans have been crushed in the past in the hydraulic presses following the cottonseed rush. Five hydraulic presses have also been added, increasing the number to 13.

* * * *

Construction has begun on the Allis-Chalmers solvent extraction plant for the Wilson Soybean Mill, Wilson, Ark. Erection will be completed in the next 3 months.

* * * *

P. W. Gull, assistant superintendent of the Delta Branch Experiment Station at Stoneville, Miss., has severed his connection with the Station to become associated with Spencer Chemical Co., Kansas City, Mo.

CHOSE TO MAINTAIN MARGARINE QUALITY

Discussing a recent increase in the price of Good Luck Margarine, J. M. Elliott, president of the John F. Jelke Co., pointed to the company's use of domestic oils as the underlying cause of the increase.

"John F. Jelke, chairman of the board and owner of the company, pioneered the use of quality domestic vegetable oils in margarine. In 1933, Good Luck Margarine was the first brand to convert from a meat fat to a domestic vegetable oil base," said Mr. Elliott. "This move, we believe, accomplished two important results. It raised the general level of margarine quality standards. It also provided a profitable expanded market for the oil crops of American farmers.

"There are other oils, principally of foreign origin, which can be used to manufacture margarine at lower cost. But, since the inception of domestic vegetable oil margarine, not a single pound of Good Luck Margarine has ever contained a trace of these cheaper, imported oils.

"Prices of domestic vegetable oils have increased sharply in recent months. With oil prices at record levels, the Jelke Co. had to choose between two courses. We either could lower the quality of our product and hold the price line; or we could maintain the quality of Good Luck Margarine at the cost of a small increase in price. We chose the latter course.

"The American public demands quality. The American housewife has learned that quality margarines are well worth a few cents' difference in price. We do not intend, at this time or at any other time when we can avoid it, to let down either our newly-found friends among consumers or the American farmers who supply the materials for Good Luck Margarine."

— s b d —

BUY MEMPHIS FIRM

Control of the International Sugar Feed Co., Memphis, Tenn., has been purchased by the Central Soya Co., Inc., of Fort Wayne, Ind., which is starting a \$500,000 modernization and expansion of the Memphis plant.

Will A. Hall, president, will remain in that capacity under the new ownership. He had been with the original company for nearly 40 years. George Lewis will continue as vice president, having been with the company for 28 years.

Sale price is reported to have been in excess of \$500,000.

— s b d —

Congress was asked to abandon international and domestic allocations and to return to normal trading practices February 12 by John B. Gordon of the American Vegetable Oils and Fats Industries.

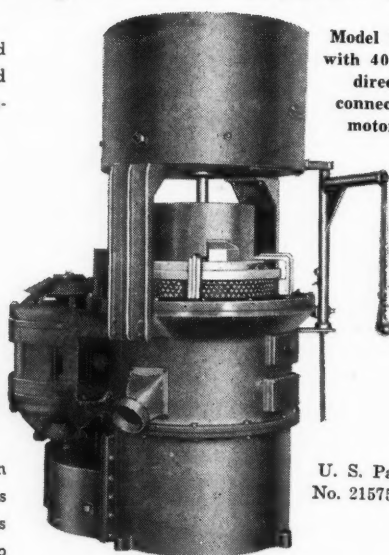
What Does the ENORMOUS 1946 Crop of Soybeans Mean?

For one thing, that farmers, stockmen and poultrymen are using more soybean feed for added protein— and general improvement.

Western PELLET MACHINES

Provide soybean feed of high efficiency, in most convenient form. Long-keeping pellets that can be fed anywhere, anytime. Pellets of every standard size from scratch to sheep and cattle.

Get the facts about WESTERN'S rugged durability — easy, one-man operation — low service cost — power-saving Direct Action. Write for your Western Representative's name and Bulletin.



Model M40
with 40 h.p.
direct
connected
motor

U. S. Pat.
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"SOYBEAN FEED AT ITS BEST"

ANGLO AMERICAN MILL CORPORATION

Incorporated
OWENSBORO, KENTUCKY, U.S.A.
Flour Mills, Feed Mills and All Types of Milling Equipment

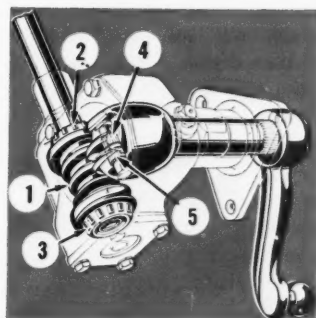
REGISTRATIONS SHOW IT — OPERATORS KNOW IT!



"FORD TRUCKS LAST LONGER!"

**ONE big reason—
FORD STEERING STANDS UP!**

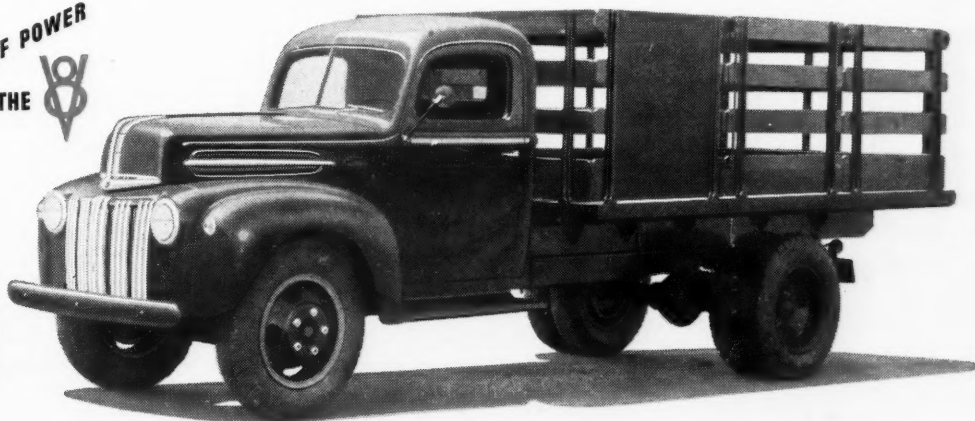
Ford worm-and-roller steering gear reduces *rubbing* friction to a minimum. *Rolling* contact is employed to reduce friction at five vital points. This spares muscle and saves wear. The worm gear (1) is straddle-mounted on two large, opposed, tapered roller bearings (2 and 3). The worm acts upon an easy-turning roller instead of a common sliding cam or split-nut, and this roller is mounted on two needle-type roller bearings (4 and 5). Bearings of both the worm and the sector shafts may be adjusted, thus promoting long life and proper action with less replacing of parts.



Ford

THE 6
YOUR PICK OF POWER
THE V8

Available in 134" and 158" wheelbases, and in 1½- and 2-ton nominal ratings, the popular Ford heavy duty chassis is shown with standard Ford 12-foot Platform Stake body, 158" wheelbase.



ONLY FORD GIVES YOU ALL THESE LONG-LIFE TRUCK FEATURES: Your choice of two great engines, the V-8 or the Six—semi-centrifugal clutch that needs no maintenance lubrication—rear axle design that takes all weight-load off the shafts ($\frac{3}{4}$ -floating in half ton units, full-floating in all others)—heavy channel section frames, *doubled* between springs in heavy duty models—big, easy-action brakes, with heavy, cast drum surfaces, non-warping and score-resistant

—extra-thick sheet metal in cabs, cowls, skirts and fenders—all told, more than fifty such examples of Ford endurance-engineering.

That's why **FORD TRUCKS LAST LONGER** . . . why, as the national truck count for 1946 just released shows, *more than half of all Ford Trucks in use are at least 9 years old* . . . why there are more Ford Trucks in service now than ever before in history. More than 100 body-chassis combinations to choose from. Ask your Ford Dealer.

MORE FORD TRUCKS IN USE TODAY THAN ANY OTHER MAKE
MARCH, 1947



Support Price The decision to leave the 1947 price support for soybeans at the old rate of \$2.04 a bushel was made in the face of recommendations from production officials for an increase to \$2.25 or \$2.40.

The request for a higher price floor was turned down on grounds:

1. That the current high prices for soybean products automatically will stimulate an increase in soybean acreage this year.

2. That prices are pretty apt to remain favorable at least on the 1947 crop because of the world fats and oils shortage.

3. That no increase, such as the \$2 a bushel boost given to flaxseed support, was justified for soybeans, since relatively vegetable oils are considerably more plentiful than drying oils.

It is also apparent that the proposed 42 percent cut in farm appropriations for the 1947-48 fiscal year had an influence on the price support decision.

Production officials had recommended the increase as justifiable to put soybeans in a somewhat more favorable price position with competitive crops.

Most production officials doubt that the acreage of soybeans for harvest will be any larger than last year—9,606,000—and some doubt that the acreage will go that high. This year's goal is 11,244,000 acres for harvest.

The official USDA announcement on soybean price support said:

"The support price has been continued at this level to encourage producers to harvest 11,244,000 acres of 1947-crop soybeans. Increased production is needed to meet estimated domestic requirements and anticipated exports in 1947-48. It is part of an over-all program to increase the domestic production of fats and oils

to meet the large postwar demand for these products."

The \$2.04 support is for U. S. No. 2 green and yellow beans containing 14 percent moisture. Black, brown and mixed varieties are supported at \$1.84.

Fats, Oils Position

The Bureau of Agricultural Economics cautiously estimates that prices of fats, oils, and oilseeds are "expected to continue high in the next few months, but may decline when marketings of the 1947 oilseed crops begin."

The Bureau looks for soybean acreage to be "expanded considerably" because of high prices this spring.

It also indicates that the expanded oil-crop acreage plus expected larger hog marketings next fall will ease the fats and oils shortage.

On protein feed prices, the Bureau says maintenance of the present high levels "depends to a considerable extent on the continuation of high prices for dairy and poultry products, and to some extent on the level of high protein feed exports."

"Over the past 10 years, livestock producers—especially dairy and poultry producers—have increased their use of protein feeds in feeding rations, largely as a result of sharply expanded use of commercial mixed feeds of higher protein content.

"Nevertheless, should there be a substantial reduction in returns from livestock and livestock products, farmers would probably reduce feed costs by shifting to lower priced feeds, and depending more upon home-grown feeds and less on commercial mixed feeds. This would be reflected in a material decline in high-protein feed prices."

By PORTER M. HEDGE

Washington Correspondent for
The Soybean Digest

BAE forecasts are based on the expectation of a break in the general farm price level about mid-summer this year, with the decline deepening in the late fall and into 1948.

Export Allocations

For the time being, the Department of Agriculture has put a stop to allocation of oilseed meals for export, although further exports are probable later in the year.

Secretary of Agriculture Anderson originally set a ceiling of 100,000 tons of oilseed meal for export. This was stretched to a total of 110,000 tons for the first quarter of 1947.

Up to early March, export licenses had been issued to cover only 75,000 tons of the total allocated. Total allocations to date in long tons:

Belgium and France, 25,000 each; The Netherlands, 20,000; Denmark, Norway and Sweden, 10,000 each; Finland and Eire, 5,000 each.

Fats, Oils Imports?

The biggest current argument over fats and oils is how to divide up the world export supply.

The House food investigating committee, under Chairman Andresen of Minnesota (R), isn't satisfied with supply figures presented either by the Department of Agriculture or by the International Emergency Famine Committee which recommends allocations. The Committee plans

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BROKERS OF SOYBEAN OIL AND PROTEINS

Complete Domestic and Foreign Coverage

105 West Adams St., Chicago, Ill.

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to dig further into the fats and oils situation.

The IEFC has the United States down to a net import basis of 178.3 million pounds for this year, about the same per capita as in 1946.

The Department of Agriculture is arguing for net imports of 435 million pounds, an increase of 2 pounds per capita over last year, but still $3\frac{1}{2}$ pounds per capita short of prewar.

Industry representatives have asked for allocations that will put the United States on about the same net import basis as prewar on grounds of a serious shortage in the second and third quarters of this year.

Research Money Republican advocates of a sharp cut in farm appropriations for the coming fiscal year have proposed delaying approval of funds for the proposed new marketing-research program for at least another year.

The President requested \$19 million for the next fiscal year to get the new research program started.

Farm-state congressmen who originally drove the bill through Congress last summer, however, intend to put up a hard fight for at least some marketing-research money, though it may not be as much as the original budget request.

— s b d —

SOYBEAN PRODUCTION IN FOREIGN LANDS

Japan's 1946 soybean harvest of 13.2 million bushels is the largest since 1939, reports *Foreign Crops and Markets*. According to the limited information available, production in Korea, Formosa, and the Netherlands Indies has likely declined from the 1935-39 figure.

Commercial production of soybeans in Europe has been greatly reduced since VE Day. Cultivation of this crop has been confined primarily to the Danube Basin countries with Rumania leading. About 80 percent of production was in Bessarabia, the Province later ceded to the Soviet Union.

Production was stimulated by German companies operating in most of these countries in the late 1930's and in the war years. These companies distributed selected seed to growers and concluded advance contracts for the entire crop at guaranteed prices.

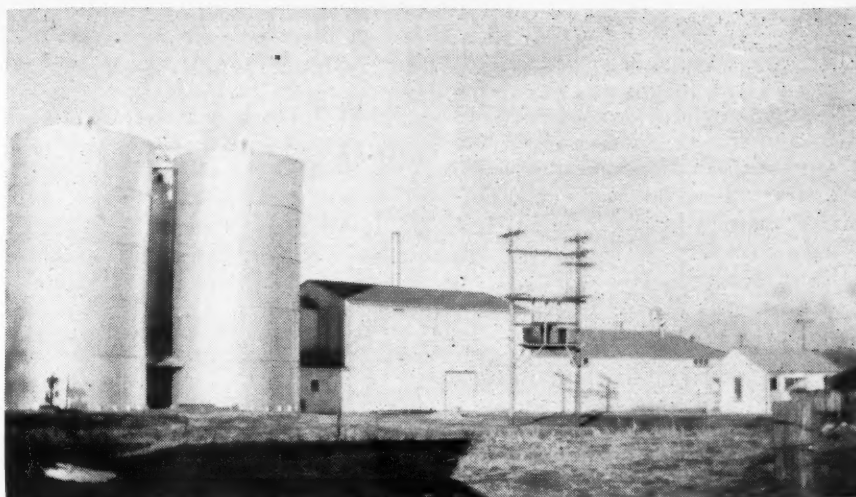
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COSTS TO RISE

Machinery costs in crop production will not come down for some time, believes R. H. Wilcox, agricultural economist of the University of Illinois College of Agriculture.

Wilcox estimates that tractor, machinery, fuel, oil and the reserve for depreciation on machinery is 29 percent of the present cost of producing soybeans.

New Iowa Soybean Mill



Plant and storage tanks of Marshall Mills, Inc., Marshalltown, Iowa, expected to be in operation April 1. Production capacity of the two-exPELLER plant is 45 tons daily; storage capacity is 50,000 bushels. Fred Johnson is president of the firm.

Nice
Package!

Flour bag to sun suit is the short story behind this eye-appealing package.

Women are buying many products—sugar, salt, seed, feed, flour, etc., in colorful Ken-Print Bags, because they are re-usable in making everything from dresses to draperies.

If your product is gathering cobwebs on retailers' shelves, let Percy Kent offer suggestions that will make them move—but fast!



BUFFALO KANSAS CITY NEW YORK

--- MARKET STREET ---

We invite the readers of **THE SOYBEAN DIGEST** to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate: 5c per word per issue. Minimum insertion \$1.00.

FOR SALE — One Richardson Automatic Scale in perfect working condition, used only short while. Also one Hess Dryer, capacity 350 bu. per hour with all controls, guaranteed to be in perfect working order. Write or phone Quincy Soybean Products Co., Quincy, Ill.

FOR SALE—Certified Lincoln, also Certified Illini seed beans in 2 bushel bags. J. Harold Canterbury, Cantrall, Ill.



— to get acquainted with the Kelly-Duplex Line.

Since 1885 — this engineered line of mill and elevator equipment has earned a position of leadership through dependable low-cost performance.

**KELLY DUPLEX
EQUIPMENT**

embraces not only the units shown here — but many others such as

Shellers, Crushers and Feed Regulators, Aspirators, Scalpers, Magnetic Separators, Bag Cleaners, Truck Hoists, Elevator Buckets, Boots, Screw - Conveyor, Spouting, etc.

—All guaranteed for your Protection.

Write for Catalog—
Our helpful suggestions
may save you time and money.



The Duplex Mill and Mfg. Co.
Springfield, Ohio

WANTED—Back issues of the *Soybean Digest*. We need copies of early issues to complete our files. We will pay 20c each or credit your subscription for the following: any issue of Vol. I; Nos. 1 and 3 of Vol. II; No. 7 of Vol. III. Address Soybean Digest, Hudson, Iowa.

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SOYBEAN OIL & MEAL
WE SOLICIT YOUR BUSINESS

SEED DIRECTORY

A charge of \$1.00 will be made to subscribers for listing in the April issue. Quantity for sale and variety are included.

ARKANSAS

Burdette—Burdette Plantation (G. A. Hale), 2,000 bu. certified Ral soy; 1,000 bu. registered Burdette 13 (improved Arksoy); 2,000 bu. registered Burdette 19 (improved Arksoy).

Scott—Robert L. Dortch Seed Farms, 1,500 bu. certified Dortchsoy No. 7; 1,500 bu. certified Dortchsoy No. 2; 1,500 bu. certified Dortch's Improved Ogden.

INDIANA

Walton—Hopper Farms, Rt. 2, 600 bu. certified Lincoln.

IOWA

Marshalltown—Dale McCubbin, Rt. 5, 900 bu. Lincoln, passed field inspection.

Remsen—Frank Lenertz, 625 bu. certified blue tag Lincoln, 95% germination; 400 bu. certified blue tag Earlyana, 93% germination.

KANSAS

Westphalia—Leo Hermann, Rt. 1, 230 bu. certified Hong Kong.

MINNESOTA

Delavan—Julian Perrizo, certified Wisconsin No. 3 Manchu; uncertified Earlyana.

Faribault—Farmer Seed & Nursery Co., Ottawa, Mandarin, Habaro, Manchu Wisconsin 606, Manchu Wisconsin No. 3, Earlyana (uncertified only), and Richland, both certified and uncertified.

Lu Verne—H. F. Boucher.

New Richland—Sam L. Zellweger & Son, 500 bu. Harbaro, 95% germination, field inspected.

MISSOURI

Bertrand—Harold Hill, Rt. 1, Box 467, 300 bu. certified Ral soy.

Kennett—Kennett Grain & Seed Co., 3,000 bu. certified Ral soy.

Marshall—MFA Seed Division, Box 515, Richmond Heights 17—Soybean Johnson, 1337 McCutcheon Heights, 200 bu.

Aoda vegetable soybeans; purity 99.9%; germination 90%.

Sikeston—C. F. McMullin Estate, 270 McCoy-Tanner Bldg., truck and car lots Ral soy, Missouri state certified from own production.

NEBRASKA

Elk City—Howard L. Wahlgren, 400 bu. certified Lincoln.

Wood River—McGuire Bros., Rt. 3, 1,500 bu. certified Lincoln.

— s b d —

STEELE WINNER IN ILLINOIS CONTEST

Verl Steele, Table Grove, won the sixth annual Illinois 10-acre soybean growing contest with a field that scored 94.2 percent out of a possible 100, the Illinois Crop Improvement Association, sponsor of the contest, announced.

Steele's yield was 46.43 bushels per acre, compared with the 37.9 bushel yield of Clement Gill, Speer, 1945 Illinois contest winner.

Average yield of the 12 leading contestants was 39.42 bushels.

Steele's production cost for the 10 acres was \$276.25, his quality grade 82 percent, and the oil content of his beans 21.1 percent.

Otto Henningsen, Atwood, was second with a score of 93.25 percent and a yield of 45.99 bushels.

Third place winner was Bert Bonwell, Chrisman. His score was 90.31 percent, his yield 44.72 bushels. Fourth place went to L. Parke Kerbaugh, Stanford, with a score of 89.09 and a yield of 40.45 bushels.

Other leading yields by sections were:

Section 1—Wm. A. Feldott, Plainfield, 36.98.

Section 2—Clement Gill, Speer, 33.32; and Homer D. Wilson, Table Grove, 39.39.

Section 3—H. L. Stiegelmeier, Normal, soybean champion at 1946 International Grain and Hay Show, 36.38.

Section 4—Harold L. Evens, Oakland, 42.99; E. H. Davis, Sullivan, 36.54; and James G. Weart, Springfield, 38.64.

Section 5—Richard E. Ellis, St. Jacob, 31.20.

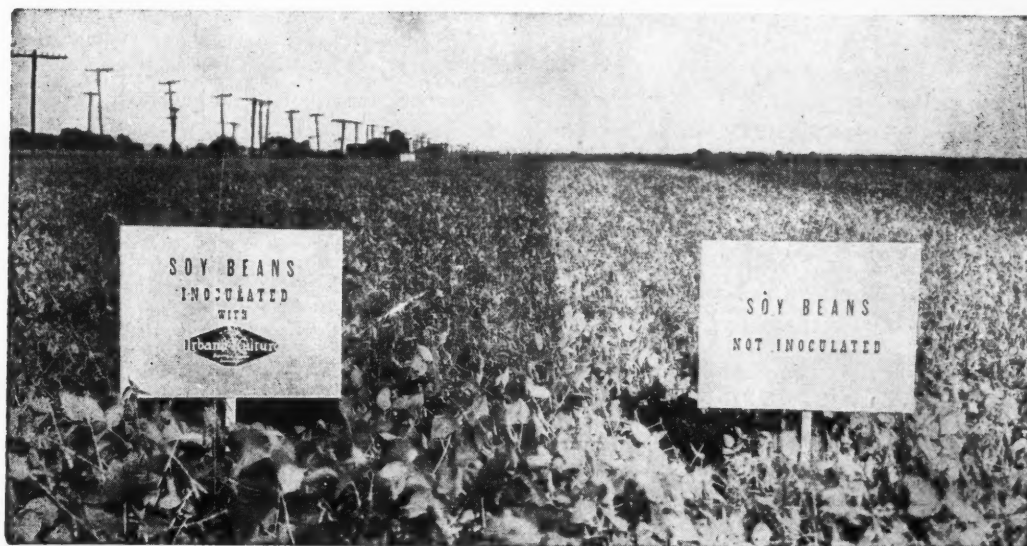
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Two-expeller plant now operating for processing flax or soybeans, in heart of producing area. Details on request. MH, Soybean Digest, Hudson, Iowa.



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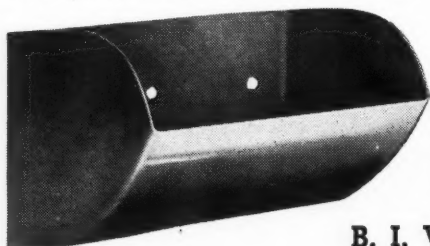
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In The MARKETS

FEBRUARY MARKETS FOR BEANS, OIL AND MEAL CLOSE STRONG

Markets for soybeans, oil and oil meal all were materially higher at month's end than they had been earlier in the month.

Bids on No. 2 soybeans were at the highest point since October; the oil market reached new highs; and the meal market after falling below the ceilings of the late OPA, made a good comeback the last 10 days of February.

No cash soybean sales were reported on the Chicago market during the month. Bids for No. 2 beans were as low as \$3.04 the first week. They climbed all month, however, and \$3.40 was bid in Chicago February 28. This was higher than any cash market quotation since \$3.51 was paid October 23.

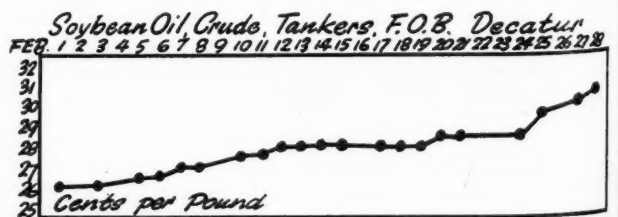
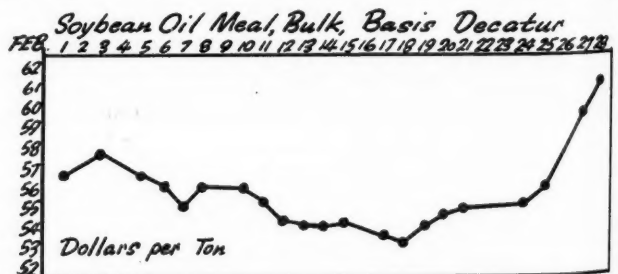
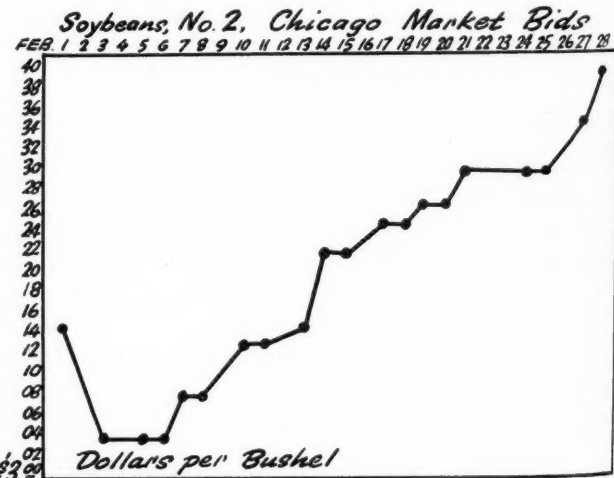
Trend in the oil market was up all month. Activity was light, with the futures market mostly at a standstill. Some export sales for February-March delivery were reported.

The month opened at 26 cents per pound for crude oil f. o. b. Decatur; and closed at a new high of 31 cents.

Saturday trading in soybean and cottonseed oil futures was resumed on the New York Produce Exchange March 1. Trading hours on soybean oil are 10:00-11:30 a. m.; on cottonseed oil, 10:15-11:45 a. m.

But February's outstanding feature was the sharp reversal in the downward trend of the soybean oil meal market which had been slipping since early December.

The market showed some firmness the first week due to ex-



SOYBEAN DIGEST

port demand, and rumors that total government allocations of protein feeds for export might reach 250,000 tons.

By the 10th, however, the market again slumped. The demand for prompt shipment oil meal was extremely thin. Shipping instructions were not coming in on meal previously sold. Processors were caught with loaded cars standing on the tracks that had to be moved. The feed business also was disappointing. Some feed manufacturers were trying to resell oil meal already bought.

Prompt shipment soybean oil meal dropped \$1.50 to \$2 a ton during the second week; the futures market at Memphis lost \$5. Bulk soybean oil meal Decatur basis was quoted at \$54.75 February 18. This was the low point of the month.

But there were reports that much distressed meal was being moved. By the 19th, the market was firmer; and by the end of that week the situation was somewhat reversed. Some processors were reported oversold.

A tonic to the market were further export allocations of protein meals, and the news that the army was stepping in and buying 26,880 tons of soy flour for relief-feeding in the Far East. The meal market was working sharply higher by month's end.

Some consumers recently out of the market came back in. Prompt or March shipment oil meal was at a premium. Lack of boxcars hampered movement.

The February 28 quotation for bulk oil meal Decatur basis was \$61.75, or at about the same level as a month earlier.

*NEW YORK SOYBEAN OIL FUTURES, FEB. 28

	Close	Pr. Cl.
March	32.00	30.00
May	32.00	30.00
July	32.00	30.00
September	31.00	29.00
October	38.00	27.00
December	26.00	25.00
January, 1948	25.00	25.00

Total sales: None.

*SOYBEAN OIL MEAL FUTURES—MEMPHIS, FEB. 28

Contract—100 tons

Decatur—Sacked basis		Decatur (bulk basis)	
March	†\$63.25	March	†\$59.00
May	†62.25	May	†58.00
July	†62.50	July	†57.00
October	†56.00	October	†52.00
December	†55.00	December	†51.00
January, 1948	†54.00	January, 1948	†50.00

Sales, 1,000. †Bid.

Sales, none. †Bid.

* Reported by Chicago Journal of Commerce.

SOYBEAN CRUSHING OCT.-DEC. REACHES RECORD LEVELS

Crushing of soybeans the first quarter of the 1946-47 season was the largest for any October-December quarter on record, reflecting the urgent demand for oil and a broad outlet for meal, the Grain Branch of the Production and Marketing Administration reports. Despite the largest soybean crop on record supplies on January 1 were only slightly larger than a year earlier but were smaller than the three previous years.

Disappearance of soybeans during the October-December quarter this year amounted to 46,266,000 bushels. This was slightly more than in the same months last year but was less than in the same period of the previous year. Crushing of soybeans for oil, as reported by the Census Bureau, totaled 41,652,000 bushels the first quarter of this season. This is about 4 million bushels more than was crushed in the first quarter last year and 9 million bushels more than the comparable quarter in 1944-45. Exports of soybeans, October through December, amounted to 1,962,000 bushels this season compared with 1,868,000 bushels last season.

The quality of the 1946 crop is not as good as the excellent 1945 crop but is better than average. Based on inspected receipts during the October-December quarter 70 percent graded No. 2 or better this season compared with 92 percent in the same months last season.

• **SOYBEAN INSPECTIONS.** Inspected receipts of soybeans in January were of considerably better quality than those for the preceding month, according to inspectors' reports to the grain



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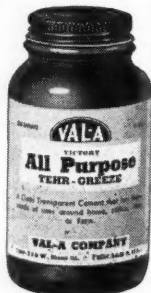
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branch of the Production and Marketing Administration. Sixty-eight percent of the January inspections graded No. 2 or better compared with 53 percent in December. Only 32 percent fell in the lower grades compared with 47 percent the preceding month.

January inspections totaled 6,139 cars compared with 7,447 cars in December. The average for the month of January for the crop years 1940-45 was 3,860 cars. Inspected receipts for October through January this season were 62,564 cars compared with 61,888 cars for the same period last season.

Inspections of soybeans in January included the equivalent of 20 cars inspected as cargo lots and truck receipts equal to about 47 cars.

• **COMMERCIAL SOYBEAN STOCKS.** Production and Marketing Administration's commercial grain stocks reports for February.

U. S. Soybeans in Store and Afloat at Domestic Markets (1,000 bu.)

	Feb. 4	Feb. 11	Feb. 18	Feb. 25
Atlantic Coast	488	419	411	391
Gulf Coast	185	185	185	185
Northwestern and Upper Lake	3,513	3,398	3,387	3,327
Lower Lake	7,279	4,875	6,919	6,696
East Central	5,018	4,973	4,927	4,803
West Central				
Southwestern & Western	3,048	2,873	2,789	2,605
Pacific Coast		21		
Total Current Week	19,531	16,744	18,618	18,007
Total Year Ago	29,367	19,155	18,167	17,231

U. S. Soybeans in Store and Afloat at Canadian Markets				
Total North American Commercial Soybean Stocks				
Current Week	19,648	18,735	18,115	
Year Ago	20,367	19,155	18,167	17,231

• **STANDARD SHORTENING SHIPMENTS.** Reported by members of Institute of Shortening Mfgs., in pounds.

February 1	5,657,525
February 8	5,492,808
February 15	8,142,948
February 22	7,947,065
March 1	9,463,953

U.S. MAIL Government Orders

• **SOYBEAN SUPPORT.** The U. S. Department of Agriculture announced February 27 the farm price of 1947-crop soybeans grading U. S. No. 2 and containing 14 percent moisture will be supported at \$2.04 per bushel for green and yellow varieties and \$1.84 for brown, black, and mixed varieties.

The support price has been continued at this level to encourage producers to harvest 11,244,000 acres of 1947-crop soybeans, the goal acreage which was announced by the Department of Agriculture on January 14. This is an increase of 1,638,000 acres above the acreage harvested in 1946.

Officials stated increased production is needed to meet estimated domestic requirements and anticipated exports in 1947-48. It is part of an over-all program to increase the domestic production of fats and oils to meet the large postwar demand for these products.

Farm prices of 1947-crop soybeans will be supported by means of loans and purchases by the Commodity Credit Corporation. Loans will be offered at support price levels in substantially the same manner as for the 1946 crop. Purchases at support price levels will be made by CCC if such purchases are necessary to assure producers receiving the minimum support price.

• **PROTEIN MEAL ALLOCATIONS.** The U. S. Department of Agriculture has announced an emergency allocation of 15,000 long tons of oil cakes or meals to Belgium and 10,000 long tons to Sweden. This is in addition to the 10,000 long tons of protein meal allocated to Belgium January 14.

Including the allocations announced the Department has made the following emergency export allocations of oil cakes and meals since January 14, totaling 110,000 long tons: Belgium, 25,000; Netherlands, 20,000; Finland, 5,000; France, 25,000; Denmark, 10,000; Norway, 10,000; Sweden, 10,000; Eire, 5,000.